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THE PSYCHOLOGICAL ENVIRONMENT
OF
PROTECTIVE SHELTERS

JULY 1966

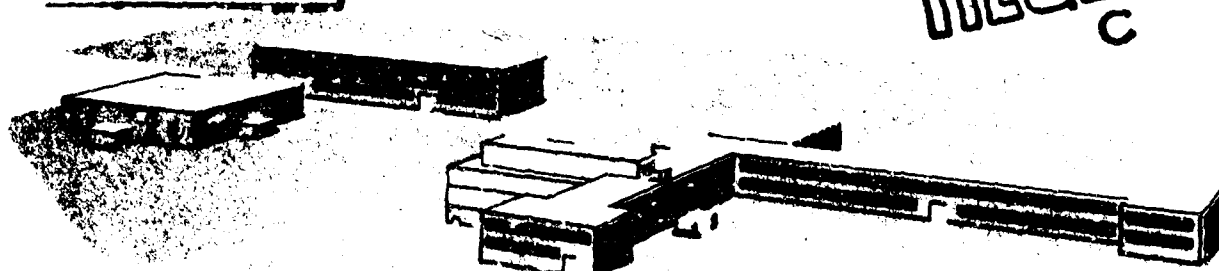
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THE PSYCHOLOGICAL ENVIRONMENT OF PROTECTIVE SHELTERS

Prepared for:
**OFFICE OF CIVIL DEFENSE
DEPARTMENT OF ARMY - OSA**

Under
**CONTRACT NO. OCD-PS-65-5
WORK UNIT 1519B**

Prepared by:
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July 1966

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ABSTRACT

The study described herein is designed to cross-validate measuring instruments prepared under Contract OCD-PS-65-5, provide a refinement of methodology for use in future shelter studies, investigate the effects of specified shelter relevant stresses, and approximate a standard for evaluation of indices of psycho-social stresses occurring in shelter confinement.

These purposes were accomplished by comparing the reactions of two equivalent groups, one subjected to selected stresses and the other not on specifically designed rating forms, tests, and experimental tasks. All other conditions of confinement were equivalent for the two groups. The validation procedure consisted of comparisons between the original group from the psychiatric hospitals and both groups from the shelter confinements. Additional information was obtained through the use of two groups in the validation portion of the study.

The results of the study indicated that a shelter group who received supplementary psychological supports evidenced a greater acceptance of confinement than the group for whom none were provided. The experimental data validated previous findings and showed that certain behaviors appear to be important in the psychological environments that exist at the beginning of and following a period of confinement. The study further showed that such psychological environments could be defined, measured, and controlled.

ACKNOWLEDGMENTS

The success of a venture as complex as the simulation of a shelter stay must necessarily result from the close cooperation of many individuals. This project was no exception, as many gave freely of their time and efforts. This was especially true for those who spent long hours around the clock at the observation post. Particular recognition is extended to:

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CHAPTER I

THE PSYCHOLOGICAL ENVIRONMENT OF PROTECTIVE SHELTERS

Introduction

"The Office of Civil Defense conducts a coordinated research effort to develop the best methods, materials, and facilities for use by civil defense at all levels of government. Most of the research effort is devoted to a 'core program', long-term in nature, to improve the state of knowledge in various technical areas" This states in part the Department of Defense's program of civil defense as it concerns research and development (OCD, 1965, p. 34). The current study is a part of this long-range program.

Background

The reader is referred to another publication for a more complete review of related research (Wright and Hambacher, July, 1965). In brief, starting with a modest beginning in 1959 with the study by Vernon, a member of well-designed studies have since been done to clarify many of the ambiguities and problems of shelter occupancy. For the most part, however, the emphasis of research has been on the physical aspects of a shelter program. This is appropriate because, until adequate data in this area are available, consideration of the psychological and sociological aspects of enshelterment is premature.

Little is known about the number or types of people who would make up or comprise the exact population of any particular shelter. Although it cannot be set up for study, those attempting to discover the many aspects related to confinement in shelters continue to develop as real a situation as is possible. Continuing to hamper researchers, also, is a lack of agreement or, at times, an actual omission of working definitions of the concepts used to represent different phenomena. One such concept is that concerning "problem" behavior in shelters. Regarding problems found in mass behavior McDermott has this to say, "While we must continue to probe the problems relating to mass behavior in a disaster, considerable evidence has been gathered to refute the notion that violence, hysteria, and general mayhem would be rife" (1962, p. 4). Thus, it would seem that we are not concerned here with extreme behaviors, but rather with the vast scope of

intermediary problems, the extent and severity of which are not now known. In this study a problem was considered as existing if an event were present that served to lessen the functioning of a shelteree as an individual or as a contributing member of a group. Not only should they be defined carefully, concepts should also be explored as they relate to the particular situation. Thus, since "problems" are likely to exist on a continuum, concepts and/or definitions should be set up to specify them. This procedure is necessary to make future research designs meaningful and to provide base lines for subsequent hypothesis testing. Also, any aspect of confinement that contributes, either negatively or positively, to the optimum functioning of an individual should be identified, defined, and explored.

Need for Current Study

One goal of the current study was to provide the Office of Civil Defense with an instrument to measure psychological and behavioral reactions to confinement by shelter occupants. Such measurements would lead to an early identification of those indicating a tendency toward problematic behavior. When these individuals are identified early in the occupancy period, the shelter manager can take appropriate measures to forestall the development of actual problems. Actions recommended for shelter managers to be appropriate in several representative problem areas have been developed and appear in the July, 1965 report of Work Unit 1519B. Contract No. OCD-PS-65-5. Under this contract the measuring instrument, the Confinement Acceptance Scale (CAS) was prepared. It was designed and developed to measure the psychological environment of confinement.

Preliminary testing of the CAS among selected "near-normal" patients confined to psychiatric hospitals indicated that the Scale was sufficiently sensitive to measure differences in an individual's perception of confinement. Preliminary testing showed also that feeling toward confinement, as well as behavior, changes during a period of confinement. For example, many individuals had high indices of Fears at the beginning of the stay but this diminished in some hospitals for some individuals, as their stay continued.

The major purpose of the present study was to validate the Confinement Acceptance Scale in a population confined to a shelter rather than one confined to psychiatric hospitals. It is desirable to know the extent to which the data gleaned from the preliminary testing hold. Some shrinkage inevitably

occurs. Thus, relationships found in each study are expected to be somewhat different. Guilford's (1954) statements on cross validation are representative of those constructing tests when he points out that the best indication of the shrinkage is actually to use the results from a new sample. Anastasi (1961) notes that empirical verification is preferable whenever possible although formulas are available for estimating the amount of shrinkage to be expected. Cronbach notes, "No matter how well a selection procedure is validated and cross-validated in the original situation, it must be validated anew when it is carried into a new situation" (1960, p.356). Thus, it would seem to be not only appropriate but necessary to validate the findings from the earlier study. The findings of those confined to psychiatric hospitals should be compared to findings from individuals confined to fallout shelters. Supplementary information was gained in this study through the use of two groups, one in which no formal plans were made for psychological support and one in which some were provided. In both cases, nothing was added or took place that was not appropriate to or realistic for confinement in shelters under actual conditions.

The purpose of this program of research was (a) to discover, through carefully controlled methods, a set of criteria for identifying the psychological environment found in confinement; (b) to discover changes in behavior during confinement; and (c) to develop methods, techniques, and bases for future research in enshelterment.

Statement of the Problems

Problem 1. To validate the finding that significant relationships exist between behavior and the psychological environment of early confinement.

To study this problem, two procedures were followed early in the period of confinement: (a) behavior and (b) the psychological environment were measured.

The following hypothesis is presented to discover the relationships posed by this problem:

H_1 : There is a significant relationship between human behavior as evidenced in four factors,

1. Dominance
2. Submission
3. Love

4. Hostility

and the psychological environment of early confinement as evidenced in eight factors,

- 1. Physical Confinement**
- 2. Psychological Confinement**
- 3. Lack of Privacy**
- 4. Lack of Physical Supports**
- 5. Lack of Familiar Behavior Patterns**
- 6. Lack of Familiar Interpersonal Relationships**
- 7. Loss of Identity**
- 8. Fears**

Problem 2. To validate the finding that significant relationships exist between behavior and the psychological environment of later confinement.

To study this problem, the same procedures given for Problem 1 were carried out 60-65 hours following the inception of the period of confinement.

The following hypothesis is presented to discover these relationships:

H₂: There is a significant relationship between human behavior as evidenced in four factors (see Problem 1) and the psychological environment of later confinement as evidenced in eight factors (see Problem 1).

Problem 3. To discover a significant difference in behavior early in and later in a period of confinement.

Two hypotheses are presented to discover these differences.

H₃: Behavior early in confinement is no different from behavior later in a period of confinement.

H₄: The distribution of scores representing changes in behavior from early confinement to later confinement will be uniform.

Problem 4. To discover a significant difference in the acceptance of the psychological environment of confinement early in and later in a period of confinement.

To answer this problem, one procedure was followed: the evaluation of acceptance of the psychological environment of confinement early and later in a period of confinement.

Two hypotheses are presented:

- H₅: The acceptance of the psychological environment representative of confinement is no different early in confinement than later in a period of confinement.
- H₆: The distribution of scores representing changes in feeling toward confinement from early confinement to later confinement will be uniform.

Problem 5. To discover significant differences in behavior in two types of shelter stays, one providing minimum psychological support and the other selected psychological support.

To discover these differences, two hypotheses are presented:

- H₇: Behavior early in confinement in a shelter with minimum psychological support is no different from behavior early in confinement in a shelter which includes selected psychological support.
- H₈: Behavior later in confinement in a shelter with minimum psychological support is no different from behavior later in confinement in a shelter which includes selected psychological support.

Problem 6. To discover significant differences in the psychological environment of two types of shelter stays, one providing minimum psychological support and the other selected psychological support.

To discover these differences, two hypotheses are presented:

- H₉: The psychological environment of early confinement in a shelter stay with minimum psychological support is no different from the psychological environment of early confinement in a shelter with selected psychological support.
- H₁₀: The psychological environment of later confinement in a shelter stay with minimum psychological support is no different from the psychological environment of later confinement in a shelter with selected psychological support.

Problems 1, 2, 3, and 4 relate to the task of validation. They were set up to determine whether or not the findings resulting from the study population composed of "near-normal" patients from psychiatric hospitals can be generalized to shelter groups. Problems 5 and 6 were set up to learn whether the presence or absence of certain psychological supports make a difference in an individual's behavior and acceptance of confinement.

Definition of Terms

The following terms were defined earlier (Wright & Hambacher, 1965, p. 7-9) for use in this study, but are presented here for the convenience of the reader.

Enshelterment applied to that period of time from the entry into and exit from a shelter. This period sometimes was known as the closed-up phase or period, the shelter stay, or the period of confinement.

Psychological environment applied to an individual's subjective frame of reference and in this research was studied in the areas specified as follows:

1. Physical confinement was defined as the inability to move freely within the confinement area and to leave this area at will.
2. Psychological confinement was defined as the inability to implement decisions affecting one's self.
3. Lack of privacy meant the inability to seclude or isolate one's self from others at will.
4. Lack of familiar physical supports meant the absence or unavailability of personal belongings, such as automobiles, jewelry, cosmetics, wearing apparel and similar meaningful items.
5. Lack of familiar behavior patterns applied to the inability to carry on normal activities found in work, recreation, religion, and other areas.
6. Lack of familiar interpersonal relationships meant the loss of normal contact with family, friends, co-workers and others and the inability to re-establish them (e. g., by telephone) at will.
7. Loss of personal identity referred to lost individuality and the fact that familiar roles cannot be played.
8. Fears was defined as emotions experienced when one is confronted by threatening danger, which may be real or only perceived. It may evolve from interactions with, for example, peers, supervisory personnel, unfamiliar surroundings, and ambiguity of roles to be played.

Human Behavior was studied as evidenced in the areas specified as follows:

1. Dominance was defined as "social boldness" or "self-assertiveness" with a desire to dominate, lead, or guide others.

2. Submission was looked upon as behavior showing a need for dependence. It is a social disposition characterized by low status and passiveness with regard to need for freedom. The submissive person is marked by docility, conformity, conscientiousness and a desire to please and gain approval.

3. Love implied agreeableness and compliance. A love-oriented person is responsive to and concerned about others. Such an individual gives freely of self, enjoys friends and acquaintances and trusts and encourages others.

4. Hostility reflects itself in belligerence and resistance to controls. The hostile person exhibits contempt for and distrust of others. Anger, cruelty, sarcasm, irritability, criticism and resentment mark the hostile character or temperament. Hostility need not be expressed openly and thus may be difficult for the untrained to detect.

A psycho-social problem was defined as any event of confinement that contributed, either negatively or positively, to the optimum effective functioning of an individual, either as a single person or as a contributing member of a group.

Group I was the study population from six psychiatric hospitals. It was composed of thirty-three "near-normal" patients. (For the criteria used in the selection of patients, please see Wright and Hambacher, 1965, Appendix B, pages 131-136.)

Group II was composed of twenty-four residents of Patton township randomly selected and invited to participate in the study. (See discussion for selection procedure.) Psychological support for this group was held to a minimum but was realistic for a fallout shelter confinement.

Group III was composed of twenty-six residents of the same township and selected in the same way. Selected psychological support, realistic for a fallout shelter confinement, was provided for this group.

Early confinement referred to the first fifteen to twenty hours in the shelter stay which began at approximately 7:30 in the evening for both groups.

Later confinement referred to that period approximately sixty to sixty-five hours following the beginning of confinement.

Psychological supports were defined as those aspects of the environment which tend to satisfy human needs which are not biologically determined.

Shelter stay referred to the entire period of confinement. It lasted approximately sixty-eight hours.

Assumptions and Limitations of the Study

The limitations of the study are centered primarily upon those related to working with small samples. For example, it was not possible to separate the shelter group into sub-classifications by age, sex, occupational and educational levels, etc., for statistical analysis because of the small number (N=24 and 26, respectively) in each shelter group. The membership of each group, however, is described in regard to these details in the discussion portion of the report.

The findings of this study can be generalized to those fallout shelters that would be used in an actual nuclear attack to the extent that the actual and simulated shelter stays are similar. As noted later in the discussion, every attempt was made to attain realism in the study.

Because of the method of selection, it was assumed that the people in the shelter stays of the study were more representative of the general population (and hence a shelter population) than individuals who volunteer might be. Those invited to participate in the study represented every twentieth individual on the tax roll of nearby Patton Township. (Every resident is listed but not every resident pays taxes.) It is assumed further that the sample was a more realistic one because the individuals lived in the same geographical area and therefore might well find themselves together in the event of an actual attack.

CHAPTER II

PROCEDURES OF THE STUDY

The present study was designed to validate earlier findings that significant psycho-social changes occur during a period of confinement. Through the use of two shelter groups it also investigated selected shelter relevant stresses. The Confinement Acceptance Scale has been refined to be used as an instrument to evaluate psycho-social stresses occurring in shelter confinement.

The topics related to the procedures of the study will be presented as follows:

Description of Independent Variables

Description of Dependent Variables

Administration of the Study

a. Pre-Confinement

1. Selection of Individuals for Study Sample
2. Description of Fallout Shelter
3. Pilot Study
4. Activities Prior to Shelter Stay

b. Confinement

c. Post-Confinement

A. DESCRIPTION OF INDEPENDENT VARIABLES

The independent variables are those over which the investigator has control. They are those which he, himself, manipulates or varies. In this study, the independent variables were developed in the first phase of the earlier study which used a psychiatric hospital population (Group I) to describe and measure the psychological environment of confinement. The instrument used to measure this, the Confinement Acceptance Scale (CAS), is made up of eight aspects which are: physical confinement, psychological confinement, lack of privacy, lack of familiar physical supports, lack of familiar behavior patterns, lack of familiar

interpersonal relationships, loss of identity, and fears (for definitions, see Introduction).

The independent variables were selected from these eight factors. They were manipulated in the two shelter confinements for Group II and Group III as follows:

Factor	Group II (min. psychol. supports)	Group III (supplementary psychol. supports)
1. Physical Confinement	Emphasis (verbal) was made on being confined: reinforcement of behavior indicating unpleasantness of confinement, crowding, etc.	Voluntary aspect was stressed; routine complaints ignored, or discussed in positive fashion. Materials (boards, hammer, ropes) were placed in shelter for their use.
2. Psychological Confinement	Democratic leadership permitted each group to set up own regulations and enforce them (no differences).	
3. Lack of Privacy	No special treatment was given either group. No privacy will be arranged for either group. (Toilet facilities, however, will be in a partitioned section and provide the only area of privacy.)	
4. Lack of Familiar Physical Supports	No special treatment was given either group. Belongings that would not normally be found on an individual or that he could collect quickly in an emergency were confiscated and held until departure time.	
5. Lack of Familiar Behavior Patterns	No special treatment was given either group.	
6. Lack of Familiar Interpersonal Relationships	Families were split up. Included were young children without their parents. No special supports were provided.	More unified family units. Supports were included to facilitate group formation (e.g., movable benches) and development of new interpersonal relationships.
7. Loss of Identity	No special treatment was given either group.	
8. Fears	No special effort to structure situations. Informed in advance on general details only as required.	Some effort was made to reduce fears. Example: They were informed in advance on selected details of shelter structure as well as shelter living.

A second form of the Confinement Acceptance Scale (Form B) was developed with emphasis upon confinement to a shelter rather than to a hospital. This form is an adaptation from the original Scale used with the hospital patients. A copy will be found in Appendix A, page A-3. Form C, a shortened version of Form B, was produced following this study and thus has not yet been used. Items inappropriate for shelter living as well as those that did not differentiate, i. e., bothered no one, were removed. A copy of Form C, along with a scoring guide, appears on page A-10.

B. DESCRIPTION OF DEPENDENT VARIABLES

As the independent variables are changed or varied, the investigator observes or measures other variables to see whether they are associated with or related to the changes introduced. These variables are called dependent variables. In this study the dependent variables were behaviors, as they were observed by others and reported by each participant. The instruments which reported these were the "Self-Description Scale - I (Leary)", "The Pre-confinement Feelings Questionnaire," "The Post-Confinement Feelings Questionnaire," and "The Follow-Up Questionnaire for Delayed Expression of Stress." These will be discussed in that order. In addition, continuous observation of the shelterees by the staff procured supplementary information which was categorized and is reported in that form. The "Nurses Observation Scale for In-Patient Evaluation" (NOSIE) proved lengthy and cumbersome. It was discarded as an instrument for accurate appraisal; however, nonquantified findings from it are reported. The Thematic Apperception Test (TAT) was given but it, too, was discarded for the quantitative analysis because the stories told by the shelterees were not expansive enough to include the factors used in the scale which quantified them. The findings of the NOSIE and TAT are not reported, therefore, because of the effect confinement had upon their administration.

Self-Description I - (Leary)

Description.

The Self-Description Scale is a standardized test by Leary (1956) to reveal self-perceptions in terms of common descriptive phrases. The modification developed for use with the hospital population remained unchanged for the current study. A copy of the scale will be found in Appendix B, page B-3.

To use this scale, a shelteree selected the statement which he felt described himself at that particular time. The use of the scale results in four measurements, with dominance and submission on either end of one continuum and love and hostility on either end of a second continuum. These four factors are defined on page 7-8 of the Introduction. Examples of statements representing dominance are: dictatorial, bossy, and able to give orders. Examples of statements representing love are: gives freely of self, helpful, and likes everybody. Next to these statements are circles. The shelteree blackened the circles next to the statements he felt applied to him at that time.

Scoring

The scores from the leaflet containing the statements are transferred to a master scoring sheet (see Appendix B) according to the category they are in. Thus, those in row "P" are put in the boxes labeled "P," those in row "A" are put in the boxes labeled "A," and so forth through the letter "Q." Scores from page 1 go in column 1 and page 2 in column 2. The computations indicated on the scoring sheet are then carried out. It will be noted that a high Dominance score precludes a high Submission score while a high Love score precludes a high Hostility score. A score of fifty serves as a central point on each continuum.

Pre-Confinement Feelings Questionnaire

Description

The Pre-Confinement Feelings Questionnaire was adapted with minor change from that of another shelter research group (Hale et al., 1965). This was used to ascertain an individual's feelings toward selected aspects of fallout shelter confinement. To use this questionnaire the shelteree circled a word that evaluated a feeling he might have. Four degrees of annoyance were possible: none, much, some, and little. Dirt, food, and toilet facilities are examples of the nineteen factors listed to be checked. At the bottom of the page the shelteree is asked to list the three things he thinks will bother him the most. A copy of the questionnaire will be found in Appendix B, page B-7.

Scoring

For the purposes of the current study, the information from the questionnaire was categorized and reported in terms of the four evaluative groupings. No attempt was made to quantify the responses.

Post-Confinement Feelings Questionnaire

Description

This questionnaire was also adapted with several changes from that of the group using the Pre-Confinement Questionnaire. While the same nineteen factors were kept, the questions were supplemented with eleven groupings of questions appropriate to the current problem. For example, one added question was: Which persons did you spend the most time with? A copy of the questionnaire will be found in Appendix B, page B-8.

Scoring

No quantification was made of the responses. As with the Pre-Confinement Questionnaire, the information obtained was categorized.

Follow-up Questionnaire for Delayed Expression of Stress

Description

The one-page questionnaire contained seven questions to elicit information concerning any delayed expression of stress which might have occurred after the shelteree returned home. After each question, space is provided on the form for each individual to write about his experiences. An example of a question included is: After returning home, did you notice any difference in your relationships with your family or with friends and acquaintances? A copy of the questionnaire will be found in Appendix B, page B-12.

Scoring

The information lends itself to categorization by individual and by problem area, rather than to quantification.

C. ADMINISTRATION OF THE STUDY

1. Pre-Confinement

a. Selection of Individuals for Study Sample

Serving as shelterees were two invited groups of approximately twenty-five people each. The individuals sent invitations were selected from the occupational tax records of a nearby township. This township was selected because it contained several kinds of living areas: lower-middle class residential, middle-upper class residential, four trailer parks, and rural or farm areas. The township is described in Appendix C, page C - 3 .

Every twentieth name on the tax register received an invitation to participate in the study. The person receiving the letter could bring members of his household with him, or members could come by themselves. A description of the sex, age, marital and family status, occupation and education appears in Appendix C, page C - 4 . The letters used are also included in the Appendix C as well as the various forms used to gather information from the individuals and to notify them as needed.

Group II was made up of the following: two complete families (one with six members and one with four members); seven partial families (one parent with two children, one parent with one child, three parents without spouse and children, and two without spouses), two related children, and three lone children. Total: twenty-four shelterees.

Group III was made up of the following: four complete families (one with six members, two with five members, and two with two members); three partial families (one parent with five children, one parent with two children, and one parent with one child) and one unmarried adult with no family. Total: twenty-six shelterees. It was expected that the five children mentioned above would be with both parents; however, the medical check-up showed the father had a heart condition so he was unable to enter. The children entered with their mother, changing that family from a complete family to a partial family.

As can be noted by an inspection of the letters and forms, all participants were to be in normally good health. The age requirement of eight was dropped in favor of the requirement that children with school experience (minimum: kindergarten) would be welcome if a parent were participating.

Each person who received an invitation to participate was asked to return the acceptance form by mail. Those accepting were interviewed by a staff member (usually the Project Director) at HRB-Singer in one of the reception rooms during regular office hours and during certain specified evening hours.

Each participant or family representative was interviewed. The personal interview had two major purposes: (a) to eliminate any with severe psychological problems which would invalidate the study; and (b) to be sure that each participant had the same base line of information and understanding. The former was ascertained through a counselling-type interview by the chief investigator. The latter was accomplished by discussing, point by point, all information made available to each participant. Arrangements were made at this time for a signed medical statement as well as legal releases for both minor children and adults.

Approximately ninety letters were mailed after the names of HRB-Singer employees were stricken from the list. Of these, twenty-five families were represented in the study, fourteen in Group II and eight in Group III. Not everyone who was sent an invitation responded. While it was not possible to interview everyone who did not respond, telephone calls were made to a random number to inquire concerning the reason. Three major responses were given: (a) could not leave job; (b) were needed by dependents (children, ill, and aged); and (c) were under a doctor's care.

b. Description of the Fallout Shelter

The study approximated the living standards provided under the Office of Civil Defense shelter marking and stocking program. The area set aside for the shelter included 10 square feet of living space per person, a general OCD space standard, with a total of 260 square feet for living plus 40 square feet for the toilet facility. A picture of the shelter will be found on page 70. Twenty square feet were used up by storage for Group II, which numbered twenty-four shelterees.

All arrangements were designed to be realistic, this is, highly similar to a place where people actually would go in time of a nuclear disaster. The shelter was located in an underground concrete tunnel, adjacent to a basement section of HRB-Singer's Building Five. The tunnel was 6.5 feet high and 5.5 feet wide. Light was provided by three bare 100-watt incandescent light bulbs, the switches as of which were under control of the shelterees. A large exhaust fan in an adjacent area pulled in fresh air to provide adequate ventilation. Cold air from the outside or warm air from the inside was provided continuously. An attempt was made at all times to keep the temperature at the normal tunnel temperature of 70-72 degrees.

The toilet facilities were set off separately to provide privacy. (This may or may not be truly representative of an actual shelter, but is necessary for a study of this kind.) Two other liberties were taken in furnishing the shelter. Ends of carpeting were put on the concrete floor and a long bench was built

along one wall. The carpeting consisted of odds and ends left over from furnishings within the company. The rough bench was built from two x fours and was similar to that which might be built by shelterees with the help of a hammer and any kind of rough lumber, crates, boxes, and so forth. For Group III an assortment of odds and ends was placed in the far corner. It consisted of several odd sized boards, rope (clothes line), and a hammer, all for whatever use the shelterees wished to make of them.

Each shelter stay had the following items:

OCD stocked items:

- 2 cases of biscuits
- 1 can of carbohydrate supplement
- 1 medical kit (A)
- 2 water drums
- 2 sanitary kits
- 1 radiation kit

Other items:

- 1 Shelter Manager's Handbook (Penn State edition)
- 1 set field phones
- 1 nightlight
- notebooks (one for each person)
- 2.5 dozen pencils
- 4 decks of playing cards
- 2 sets of checkers (without checkerboard)
- 6 ashtrays
- 4 waste paper baskets

These supplies were supplemented by items the shelterees brought. (See page 74.) Each person was asked to bring two blankets plus whatever he might have on his person or could gather in one or two minutes if he had to find shelter quickly outside his home, school, or office in an emergency.

c. Pilot Shelter Stay

A pilot shelter stay was carried out several days prior to the time set for the study. Its purpose was to test the shelter facilities and the experimental procedure to insure proper functioning. Five staff members, including the project director, tested the shelter to be used in the actual shelter runs with subjects. A period of twenty-four hours was spent living in the shelter. Several minor adjustments were made, such as having the subjects bring two blankets instead of one.

d. Activities Prior to Shelter Stay

Group II and Group III were handled in the same manner throughout, except for the variables as indicated earlier. Members of the groups received a postal card notice the day before they were to come for the stay. At that time Group III but not Group II, was told that their food would consist of crackers and water plus a carbohydrate supplement and that they could bring what they could gather in one or two minutes if they were suddenly called from home, school or work, or off the street. (See Appendix C, page C-9.)

The actual period of confinement was scheduled to start as early each Thursday evening as possible. The time set was 7:00, although each person was asked to arrive as soon after 6:30 as possible for the physical check-up. This allowed those who were employed to complete Thursday at their job, have dinner, and go to the shelter. The time of departure was set for Sunday afternoon to allow those who wished to attend the last church services of the day.

The participants arrived in the lobby of HRB-Singer, Building 5, starting at 6:30 each Thursday evening. Each person underwent a brief medical check-up and answered questions asked by the physician relevant to his health. Each individual had previously submitted a statement that he was in normally good health. This was signed by his personal physician. The Pre-Confinement Questionnaire was filled out during the time the individual was waiting for the check-up or after he had had it.

When all were finished, the group was ushered into a second lobby where each was questioned by staff members concerning belongings. All items that were unrealistic were confiscated and held by HRB-Singer's Security Department for return at departure time. The only items confiscated were games in

bulky packages brought by one family in Group II. Small, easily managed games, books, and papers were permitted. Chewing gum, candy bars and life savers were the only edible items brought by the subjects to the shelter.

A short briefing was held at this time. Information given previously (see Appendix C, page C-12) was re-stated, the shelter manager was introduced, and the group was escorted to the shelter area. It was at this briefing that the participants were informed for the first time that the study entailed practices and procedures developed for setting up and maintaining shelter organization and that some of the supplies were those furnished in fallout shelters by OCD.

2. Confinement

The period of confinement lasted seventy hours. Significant incidents and activities of interest were recorded by means of tape and by a log book kept by the team of observers. Through the use of field phones information relating to the well-being of the shelterees was obtained twice each day, once in the morning and once in the late afternoon. Checked were: adequacy of temperature and ventilation and the existence of illnesses or problems. As set up in the early stages of planning, all scheduled events had to answer affirmatively to the question: Might "this" be done "this" way in an actual emergency?

The period of confinement ended seventy hours after it began. The subjects were first aware of the exact time when notification was made via the field phones ten minutes prior to the official departure time. The announcement produced differences in reactions between the two groups. The first group got ready to go and waited impatiently for the doors to open. The second group reacted with a loud "Hooray!" but continued their activities, e. g., card playing, reading, etc.

Throughout the period of confinement the shelter was organized and run as one actually might be in an emergency. A trained, experienced shelter manager with an orientation toward democratic leadership had been selected and all physical arrangements regarding the shelter were worked out with his assistance. In brief, the democratic leadership orientation was chosen because it lends itself to a more natural expression of behavior. It is well known that, in a democratic system, individuals are more likely to think and act as they choose than they would under an autocratic leader where their actions are governed by others. Thus, leadership orientation was chosen to serve the purposes of the study.

During the two periods of confinement, the shelter manager kept his leadership style as consistent as possible so that it did not become an additional variable in the study. This style was the one he has developed and found successful in previous shelter management training exercises held throughout Pennsylvania. Comments concerning shelter management were made by the shelter manager and can be found in Chapter IV, pages 75 to 88.

A member of the Behavioristics Laboratory staff joined both groups as a shelteree. Because of his special electronics skills he posed as an electronics specialist who worked on a classified project at HRB-Singer. This seemed to be accepted by the other shelterees without question. The shelter manager, of course, knew his true identity and, as arranged delegated him the task of giving out the questionnaires during the shelter stay. Everything went smoothly during the Group II stay. For the next stay, which began four days after the first had been completed, the staff member brought in a small amount of food (jelly, fruit juice and two small cans of meat). He said later that he simply could not face confinement again, especially having to consume the simple diet of crackers and water. The shelter manager did not collect the food since he assumed it was a part of the planned shelter stay procedure. The other shelterees appeared surprised but were apparently not hostile. Because this situation was not realistic to shelter living, as being tested, it was decided to terminate the staff member's stay before it influenced the group. At the first suitable moment, when most people were resting or otherwise diverted, a telephone call was made into the shelter telling the shelter manager that electronic equipment on Mr. B's project had broken down and he was needed to repair it without delay. Mr. B. left almost immediately. His departure was accepted without question and with little comment by the shelterees. The small amount of food remaining was distributed by the shelter manager to one child who had difficulty eating the crackers, other children and the pregnant women.

There were no other defectors or persons who incompleting the shelter stay by leaving early before the official termination of the confinement. It might be noted here that the possibility of an early departure was never discussed with the subjects. This was a purposeful attempt to prevent the formation in the subjects' minds of the idea, "I can leave if I choose to". Had anyone asked about this possibility, it would have been honestly discussed with them.

The Confinement Acceptance Scale and the Self-Descriptions Scale I (Leary) were given to the shelterees at two different times during the period of confinement, both groups receiving them at approximately the same time. The first time was Friday morning at the beginning of confinement and the second late Sunday morning near the end of the shelter stay. Both instruments are self-administering and were distributed by either the (incognito) staff member or the shelter manager.

3. Post-Confinement

Although the general time of departure "late afternoon" was known by the shelterees, the specific departure time was announced only a few minutes prior to departure. When the doors were officially opened, the subjects were escorted to the lobby area where the following activities were carried out: filling out the Post-Confinement Questionnaire, getting a medical check-up, receiving confiscated belongings, getting paid, and receiving clearance from the Security Guard to leave. The shelter manager also was debriefed at this time by staff members. (See Chapter IV, pages 78 to 80.)

This phase went very smoothly. On the whole, all of the subjects seemed tired and worn. Several expressed a desire to hurry home to clean up. Some purchased soft drinks and foods from automatic machines, but most just sat listlessly waiting to finish and leave.

Supplementary Procedure: Post-Departure. During the week following the study, some of the subjects telephoned the project director to tell her of interesting events, related to the shelter, that happened later. Two examples are: (1) Shelteree No. 10 said that his family was especially irritable during the two days following their return home. This wore off about mid-week. (2) A staff member was told from a very reliable source that one of the children in the first shelter stay had cried the first night after returning home. She was easily identified by the staff as the fifteen year old girl who entered the shelter alone with her nine year old brother. She had difficulty eating in the shelter but appeared jolly most of the time. (It was of special interest to the chief investigator to discover later that this particular individual made no reference to this in a post-departure questionnaire and indicated that nothing unusual had happened to her.)

A letter was subsequently mailed to each of the subjects along with an information blank. Copies of both are included in the Appendices on pages B-12 and C-10. A report on these comments is included in Chapter IV of this report.

Chapter III

DATA ANALYSIS AND FINDINGS

The data obtained from the current study with Groups II and III were analyzed similarly to those of the study with the sample from the psychiatric hospitals, Group I (see Wright and Hambacher, 1965). In addition, supplementary, non-quantifiable material was gathered and subsequently categorized and analyzed and is discussed in Chapter IV of this report.

The major statistical procedure was correlational analysis. This was used to determine those factors in the psychological environment of confinement that accompanied adjustment or nonadjustment to confinement. In addition, factor analyses were made to identify patterns or groupings which might exist both early and late in the period of shelter confinement. In this design the factor analysis served as a deductive procedure to give the data operationally defined factors. The factors obtained were rotated orthogonally to determine which variables contributed most to each factor. A correlational analysis was run on the factors to learn their relationship with one another. The goal of this procedure was to assist in determining the psychological environment of confinement as measured by the Confinement Acceptance Scale (CAS). Subsequently, the CAS was refined to serve as a standard to evaluate psychosocial stresses that occur in shelter confinement.

The correlational analysis and related statistical procedures were carried out and are reported for two study groups, Groups II and III (Group I was reported earlier, see Wright, Hambacher, 1965). Measurements were taken both early and late in the period of confinement.

Another purpose of the study was to investigate the effects of specified shelter relevant stresses. To carry this out Group II and Group III were varied experimentally and data gathered for each group were compared. A t-test was made for each variable to test the null hypotheses that the means of the scores in both early and late periods in confinements for Group II did not differ significantly from the means of the scores for Group III, taken both early and late in the shelter stay. This indicated the quantity of change of the average score. Another procedure, the Chi-square analysis, checked the extent to which individual scores showed a decrease, an increase, or no change.

Analysis of variances were carried out to test the significance of the difference between the mean scores for the three groups. This procedure indicated the similarity of the three groups. Figures were drawn to visually present data from Groups I, II, and III.

Statistical procedures that generally accompany data analysis were carried out in addition to the foregoing. These include the intercorrelations among the variables and the estimation of reliability.

One goal of the current research was to produce a standard to evaluate indices of psycho-social stresses as they occur in shelter confinement. All of the statistical procedures that have been discussed thus far serve that purpose. However, additional data related to shelter confinement were collected, categorized, and reported in Chapter IV. Included are: Pre- and Post-Confinement Feelings Most Bothersome, Leadership Preference and Shelteree Least Preferred Use of Shelter Space, Methods of Distributing Food, Reactions of Split Families, Needs of Special Groups, Items Taken into the Shelter, Items Desired in Shelter Stays, Shelter Manager's Comments, Summary of Shelter Manager's Debriefing Remarks, Decrement in Performance of Mental Tasks, Delayed Expressions of Stress, and some Pertinent Information Regarding Shelter Experience and Impact.

A. GROUP II

Statistical Summary of Scores Taken Early in Confinement Reliabilities of the Measurements

Table 1 presents a statistical summary of the scores obtained for both the independent and dependent variables during the first morning of confinement in the shelter. Confinement actually began in the evening of the previous day. In the table are found the tests' means, standard deviations, variances, sums of squares, standard errors of measurement, standard errors of test means and reliabilities. The reliabilities, determined by the Kuder-Richardson Formula 21, are all above .60, an acceptable minimum for good tests.

Intercorrelation Between the Dependent Variables

Table 2 shows the intercorrelation between the sub-scales of the Self-Description I (Leary) to be .42, indicating a relationship statistically significant at the .05 level. This tells us that, in our sample, a high degree of dominance accompanied a high degree of love and that a high degree of submission accompanied a high degree of hostility. Thus, the behavior of shelterees tended to be submissively hostile or dominantly "loving."

Intercorrelations Among the Independent Variables - (Early - Group II)

The intercorrelations among the sub-parts of the CAS were all high, going from .55 to .89. As will be seen later in the factor analysis, the eight factors of the CAS apparently do not measure independent phenomena. These intercorrelations are presented in Table 3.

Problem 1 (Group II)

Restatement of the Problem

Problem 1. To validate the finding that significant relationships exist between behavior and the psychological environment of early confinement.

To study this problem two procedures were followed for Group II early in the period of confinement: (a) behavior and (b) the psychological environment were measured. To discover these relationships, the following hypothesis is presented:

H₁ : There is a significant relationship between human behavior as evidenced in four factors,

1. Dominance
2. Submission
3. Love
4. Hostility

and the psychological environment of early confinement as evidenced in eight factors,

TABLE 1 STATISTICAL SUMMARY: INDEPENDENT AND DEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP II (N = 22)

	MEAN	STANDARD DEVIATION	VARIANCE	SUM OF SQUARES	S E OF MEASUREMENT	S E OF TEST MEAN	RELIABILITY (K-R 21)
DEPENDENT VARIABLES							
SELF-DESCRIPTORS I (LEARY)							
1. DOMINANCE (VS. SUBMISSION)	51.55	6.32	39.97	839.45	3.29	1.35	.73
2. LOVE (VS. HOSTILITY)	52.46	5.81	33.76	709.45	3.49	1.24	.64
INDEPENDENT VARIABLES							
SELF-DESCRIPTORS II (CONFINEMENT ACCEPTANCE)							
1. PHYSICAL CONFINEMENT	31.50	5.80	33.69	707.50	2.67	1.24	.78
2. PSYCHOLOGICAL CONFINEMENT	33.58	5.08	25.78	541.32	2.79	1.08	.70
3. LACK OF PRIVACY	35.82	6.59	43.39	911.27	2.90	1.40	.81
4. LACK OF PHYSICAL SUPPORTS	34.77	4.91	24.09	505.86	2.21	1.05	.80
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	36.14	4.71	22.22	466.59	2.67	1.01	.63
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	36.66	5.74	32.89	690.77	3.10	1.22	.71
7. LOSS OF IDENTITY	37.05	6.53	42.62	894.95	2.67	1.38	.81
8. FEARS	35.55	6.66	47.02	987.45	3.02	1.46	.81

TABLE 2 INTERCORRELATION BETWEEN SUBSCORES OF DEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP II

SELF-DESCRIPTION I (LEARY)	1					
1. DOMINANCE (VS. SUB- MISSION)						
2. LOVE (VS. HOSTILITY)	.42*					
FOR DF = 21, R = .41 FOR P < .05(*) AND .53 FOR P < .01(**)						

1. Physical Confinement
2. Psychological Confinement .
3. Lack of Privacy
4. Lack of Familiar Physical Supports
5. Lack of Familiar Behavior Patterns
6. Lack of Familiar Interpersonal Relationships
7. Loss of Identify
8. Fears

Table 4, page 26 presents the correlations between the dependent and independent variables. It will be noted that the correlation is low, going from .00 to -.16 and .14. It would appear that an acceptance or nonacceptance of confinement does not seem to be reflected in changes in behavior as represented by measurements of dominance, submission, love and hostility. This was true for Group I. Hence, H_1 is not accepted for Group II.

Principal Components Analysis Rotation and Correlation (Early - Group II)

Table 5 shows an analysis of the principal components. As before with Group I, a strong general factor emerges. The first factor was many times larger than any of the subsequent ones or a combination of them. The second factor extracted (1.45) was made up for the most part of that aspect measured by the love scales. The third factor was made up chiefly of submissiveness. A strong general factor shows the existence of an element common to all the tests.

Tables 6 and 7 show the rotation and correlation of the factors. As will be noted, Factors I and II are negatively correlated with a value of -.43.

Statistical Summary of Scores Taken Late in the Period of Confinement (Group II)

A second set of scores was taken (approximately fifty hours after the first set) by the instruments measuring the dependent and independent variables. Table 8 presents that summary of data. It will be noted that the reliabilities are all above .60.

Intercorrelation Between the Dependent Variables (Group II - Late)

Table 9 shows that the sub-scores from Self-Descriptions - I (Leary) are slightly correlated ($r = .29$). As noted at the bottom of the table, this value must reach .41 to be statistically significant. This then shows a difference in

TABLE 3 INTERCORRELATION AMONG SUBSCORES OF INDEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP II

SELF-DESCRIPTION II	1	2	3	4	5	6	7
1. PHYSICAL CONFINEMENT	.80**						
2. PSYCHOLOGICAL CONFINEMENT	.71**	.84**					
3. LACK OF PRIVACY	.87**	.74**	.80**				
4. LACK OF PHYSICAL SUPPORTS	.77**	.87**	.77**	.81**			
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.55**	.77**	.72**	.68**	.89**		
6. LACK OF FAMILIAR INTERPER. REL.	.74**	.78**	.82**	.81**	.85**	.77**	
7. LOSS OF IDENTITY	.83**	.85**	.82**	.71**	.78**	.83**	.81**
8. FEARS							

FOR DF = 21, R = .41 FOR P < .05(*) AND .53 FOR P < .01(**)

TABLE 4 CORRELATIONS BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP II

DEPENDENT VARIABLES SELF-DESCRIPTION I (LEARY)	INDEPENDENT VARIABLES: PSYCHOLOGICAL ENVIRONMENT SELF-DESCRIPTION II, CONFINEMENT ACCEPTANCE SCALE							
	1 PHYSICAL CONFINEMENT	2 PSYCHOLOGICAL CONFINEMENT	3 LACK OF PRIVACY	4 LACK OF PHYSICAL SUPPORTS	5 LACK OF FAM. BEH. PAT.	6 LACK OF INTERPER. FAM. RELAT.	7 LOSS OF IDENTITY	8 FEARS
1. DOMINANCE (VS. SUBMISSION)	-.11	-.16	-.08	-.10	-.11	-.06	-.09	-.07
2. LOVE (VS. HOSTILITY)	.10	.12	.13	-.06	.01	-.08	.00	.14

FOR DF = 21, R = .41 FOR P < .05(*) AND .53 FOR P < .01(**)

TABLE 5 PRINCIPAL COMPONENTS ANALYSIS FOR EARLY CONFINEMENT, GROUP II

VARIABLE	FACTOR I		FACTOR II		FACTOR III		FACTOR IV		FACTOR V		FACTOR VI	
	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE
1. DOMINANCE (VS. SUBMISSION)	-.12	6.42	.61	1.45	.53	0.71	-.21	0.43	.08	0.35	-.04	0.23
2. LOVE (VS. HOSTILITY)	.05		.87		.38		.27		-.10		.10	
3. PHYSICAL CONFINEMENT	.85		.06		.26		-.31		.24		.16	
4. PSYCHOLOGICAL CONFINEMENT	.93		.03		.13		.12		.12		-.07	
5. LACK OF PRIVACY	.90		.08		.04		.00		-.26		-.25	
6. LACK OF PHYSICAL SUPPORTS	.87		-.07		-.15		-.13		-.36		.23	
7. LACK OF FAMILIAR BEHAVIOR PAT.	.94		-.04		-.12		.14		.15		.17	
8. LACK OF INTERPER. FAM. REL.	.84		-.08		-.38		.35		.14		-.03	
9. LOSS OF IDENTITY	.92		-.02		-.10		-.05		-.11		.00	
10. FEARS	.90		.11		.18		-.19		.10		-.20	

TABLE 6 THE ROTATED FACTOR MATRIX INCLUDING SIX COMMON FACTORS*, EARLY CONFINEMENT, GROUP II

VARIABLES	FACTORS					
	I	II	III	IV	V	VI
1. DOMINANCE (VS. SUBMISSION)			-.97			
2. LOVE (VS. HOSTILITY)	.90	.97				
3. PHYSICAL CONFINEMENT	.54			.50		
4. PSYCHOLOGICAL CONFINEMENT	.40			.45		
5. LACK OF PRIVACY				.42	-.79	
6. LACK OF PHYSICAL SUPPORTS	.47			.75		
7. LACK OF FAMILIAR BEHAVIOR PATTERNS				-.83		
8. LACK OF INTERPERSONAL FAMILIAR REL.	.43			.54		
9. LOSS OF IDENTITY	.62					
10. FEARS						-.65

*LOADINGS WITH AN ABSOLUTE VALUE UNDER .40 ARE OMITTED.

TABLE 7 CORRELATION MATRIX OF SIX FACTORS: EARLY CONFINEMENT, GROUP II

FACTOR	I	II	III	IV	I
I					
II	-.43				
III	.70	.31			
IV	.32	-.69	.65		
I	-.35	.60	-.56	-.43	
II	-.31	.30	-.50	-.31	.42

TABLE 8 STATISTICAL SUMMARY: INDEPENDENT AND DEPENDENT VARIABLES, LATE CONFINEMENT, GROUP II

DEPENDENT VARIABLES SELF-DESCRIPTORS I (LEARY)	MEAN	STANDARD DEVIATION	VARIANCE	SUM OF SQUARES	S E OF MEASUREMENT	S E OF TEST MEAN	RELIABILITY (K-R 21)
1. DOMINANCE (VS. SUBMISSION)	50.59	7.36	54.16	1137.32	3.53	1.57	.77
2. LOVE (VS. HOSTILITY)	50.91	5.52	30.47	638.62	3.15	1.18	.67
INDEPENDENT VARIABLES SELF-DESCRIPTORS II (CONFINEMENT ACCEPTANCE)							
1. PHYSICAL CONFINEMENT	32.09	7.39	54.56	1145.62	3.82	1.58	.72
2. PSYCHOLOGICAL CONFINEMENT	33.46	7.12	50.74	1065.45	2.78	1.52	.85
3. LACK OF PRIVACY	35.59	6.85	46.92	985.32	2.68	1.46	.82
4. LACK OF PHYSICAL SUPPORTS	33.09	6.86	47.04	987.82	2.81	1.46	.83
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	35.18	6.05	36.63	769.27	2.84	1.29	.78
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	36.96	7.07	50.05	1050.95	2.55	1.51	.87
7. LOSS OF IDENTITY	37.59	6.86	47.11	989.32	2.81	1.46	.83
8. FEARS	35.91	7.10	50.37	1057.62	2.98	1.51	.82

the dependent variables from early to late confinement. This probably can be attributed to the fact that the hostility scores increased for Group II. This was not true for Group I or Group III.

Intercorrelations Among the Independent Variables (Group II - Late)

Again the independent variables were shown to be highly intercorrelated, ranging from .42 to .92 as shown in Table 10. This, too, will support the large general factor found in the subsequent principal components analysis, showing an element common to the tests.

Problem 2 (Group II)

Restatement of the Problem

Problem 2. To validate the finding that significant relationships exist between behavior and the psychological environment of later confinement.

To study this problem, the same procedures given for Problem 1 were carried out 60-65 hours following the inception of the period of confinement and approximately 50 hours after the first set of scores were obtained. The following hypothesis is presented to discover these relationships:

H₂: There is a significant relationship between human behavior as evidenced in four factors (see Problem 1) and the psychological environment of later confinement as evidenced in eight factors (see Problem 1).

Table 11 shows the correlations between the independent and dependent variables. It will be noted that, while not significantly correlated at values that range from 01 to -.36 and .22, the correlations are much higher than those of early confinement presented on Table 4. H₂ is not supported.

Principal Components Analysis, Rotation, and Correlation of Factors (Late - Group III)

An analysis of the principal components for late confinement is shown in Table 12. Tables 13 and 14 show the results of the subsequent rotation and correlation of these factors. The first factor extracted proved to be a large general one (6.36) and, as can be seen, was made up of six variables from the CAS. The second factor (1.35) is made up of the measurement of hostility (-.97)

TABLE 9 INTERCORRELATION BETWEEN SUBSCORES OF DEPENDENT VARIABLES, LATE CONFINEMENT, GROUP II							
SELF-DESCRIPTION I (LEARY)	1						
1. DOMINANCE (VS. SUBMISSION)							
2. LOVE (VS. HOSTILITY)	.28						

TABLE 10 INTERCORRELATION AMONG SUBSCORES OF INDEPENDENT VARIABLES, LATE CONFINEMENT, GROUP II							
SELF-DESCRIPTION I (LEARY)	1	2	3	4	5	6	7
1. PHYSICAL CONFINEMENT	.82**						
2. PSYCHOLOGICAL CONFINEMENT	.72**	.84**					
3. LACK OF PRIVACY	.83**	.83**	.78**				
4. LACK OF PHYSICAL SUPPORTS	.85**	.83**	.72**	.77**			
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.52**	.58**	.56**	.42**	.77**		
6. LACK OF FAMILIAR INTERPERSONAL REL.	.84**	.78**	.84**	.88**	.89**	.87**	
7. LOSS OF IDENTITY	.76**	.85**	.80**	.79**	.83**	.70**	.84**
8. FEARS							

FOR $df = 21$, $r = .41$ FOR $P < .05(^*)$ AND $.53$ FOR $P < .01(**)$

TABLE 11 CORRELATIONS BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES, LATE CONFINEMENT, GROUP II								
DEPENDENT VARIABLES SELF-DESCRIPTION I (LEARY)		INDEPENDENT VARIABLES: PSYCHOLOGICAL ENVIRONMENT SELF-DESCRIPTION II. CONFINEMENT ACCEPTANCE SCALE						
	1 PHYSICAL CONFINEMENT	2 PSYCHOLOGICAL CONFINEMENT	3 LACK OF PRIVACY	4 LACK OF PHYSI- CAL SUPPORTS	5 LACK OF FAM. SEN. PAT.	6 LACK OF FAM. INTERPER. REL.	7 LOSS OF IDENTITY	8 FEARS
1. DOMINANCE (VS. SUBMISSION)	-.36	-.31	-.05	-.16	-.24	-.18	-.18	-.14
2. LOVE (VS. HOSTILITY)	.26	.28	.26	.22	.14	.01	.08	.12
FOR DF = 21, R = .41 FOR P < .05(6) AND .53 FOR P < .01(66)								

FOR $df = 21$, $r = .41$ FOR $P < .05(^*)$ AND $.53$ FOR $P < .01(**)$

TABLE 12 PRINCIPAL COMPONENTS ANALYSIS FOR LATE CONFINEMENT - GROUP II

VARIABLE	FACTOR I		FACTOR II		FACTOR III		FACTOR IV		FACTOR V		FACTOR VI	
	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE
1. DOMINANCE (VS. SUBMISSION)	.26	6.36	-.77	1.35	-.51	0.87	-.13	0.57	.23	0.41	-.02	0.15
2. LOVE (VS. HOSTILITY)	.22		-.61		.36		.34		-.19		.05	
3. PHYSICAL CONFINEMENT	.90		.01		.34		.02		.18		-.06	
4. PSYCHOLOGICAL CONFINEMENT	.95		-.02		.20		-.02		-.01		-.15	
5. LACK OF PRIVACY	.90		-.18		-.12		-.21		-.18		-.12	
6. LACK OF PHYSICAL SUPPORTS	.87		-.11		.17		-.30		.18		.24	
7. LACK OF FAMILIAR BEHAVIOR PAT.	.91		.08		-.04		.18		.29		.04	
8. LACK OF FAM. INTERPER. REL.	.72		.20		-.42		.48		.02		.05	
9. LOSS OF IDENTITY	.86		.95		-.25		-.10		-.35		.16	
10. FEARS	.94		-.01		-.20		-.10		-.02		-.14	

TABLE 13 THE ROTATED FACTOR MATRIX INCLUDING SIX COMMON FACTORS*, LATE CONFINEMENT, GROUP II

VARIABLES	FACTORS					
	I	II	III	IV	V	VI
1. DOMINANCE (VS. SUBMISSION)						
2. LOVE (VS. HOSTILITY)		-.97	-.97		.87	
3. PHYSICAL CONFINEMENT	.46				.75	
4. PSYCHOLOGICAL CONFINEMENT	.74				.53	
5. LACK OF PRIVACY	.42			.56	.83	
6. LACK OF PHYSICAL SUPPORTS				.92	.73	
7. LACK OF FAMILIAR BEHAVIOR PATTERNS						
8. LACK OF FAMILIAR INTERPER. RELATIONSHIPS						
9. LOSS OF IDENTITY	.85					
10. FEARS	.62				.58	

* LOADINGS WITH AN ABSOLUTE VALUE UNDER .40 ARE OMITTED.

since this is on the negative side of the continuum. Likewise, Factor III is dominated by submission which is on the negative side of the dominance-submission continuum. Factors I and II are correlated. Factors III and beyond should not be given much consideration because they do not contribute enough to the total environment from which the factors were extracted. From the procedures associated with the principal components analysis, Group II can be described as accepting confinement early with submission. Factor II in the early period of confinement was made up of dominance and love scores. In the later period of confinement this factor was made up of the opposite ends of the continuum, namely, submission and hostility. The large G-factor, made up of acceptance measurements, dominated in both.

B. GROUP III

Group III's data were analyzed in the same manner as Group II's and will be presented in Tables 15 - 28 which parallel Group II's Tables 1-14. The reader is referred to explanatory statements that accompany those tables which will not be repeated for the following discussion. It will be recalled that Group II received no special treatments while Group III received supplementary psychological supports.

Statistical Summary of Scores Taken Early in Confinement Reliabilities of the Measurements

Table 15 presents the statistical summary of scores obtained for both the independent and dependent variables for Group III during the first morning of confinement in the shelter. The reliabilities are all above .60, an acceptable minimum for good tests.

Intercorrelations Between the Dependent Variables (Group III - Early)

Table 16 shows that the sub-scores from the Self-Descriptions I (Leary) are highly correlated with $r = .38$, with a value of .39 needed for statistical significance at the .05 level. This would mean, for example, that a high degree of dominance accompanied a high degree of love and, conversely, a high degree of submission accompanied a high degree of hostility. Low degrees would accompany low degrees for each.

TABLE 14 CORRELATION MATRIX OF SIX FACTORS: LATE CONFINEMENT, GROUP II

FACTOR	I	II	III	IV	V
I					
II	.48				
III	.53	.18			
IV	.27	.53	.51		
V	.38	.31	.78	.16	
VI	-.16	.02	-.19	-.04	-.14

TABLE 15 STATISTICAL SUMMARY: INDEPENDENT AND DEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP III (N = 25)

	MEAN	STANDARD DEVIATION	VARIANCE	SUM OF SQUARES	S E OF MEASUREMENT	S E OF TEST MEAN	RELIABILITY (K-R 21)
DEPENDENT VARIABLES							
SELF-DESCRIPTORS I (LEARY)							
1. DOMINANCE (VS. SUBMISSION)	50.40	5.39	28.00	686.00	2.48	1.077	.79
2. LOVE (VS. HOSTILITY)	57.00	9.25	85.58	2054.00	2.58	1.85	.92
INDEPENDENT VARIABLES							
SELF-DESCRIPTORS II (CONFINEMENT ACCEPTANCE)							
1. PHYSICAL CONFINEMENT	35.24	7.92	62.69	1504.56	3.96	1.58	.75
2. PSYCHOLOGICAL CONFINEMENT	37.00	6.47	41.82	1006.00	2.38	1.30	.86
3. LACK OF PRIVACY	40.00	6.34	40.17	984.00	3.55	1.27	.69
4. LACK OF PHYSICAL SUPPORTS	36.40	6.75	45.58	1094.00	2.70	1.35	.84
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	38.32	5.26	27.64	863.44	2.58	1.05	.76
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	40.88	6.46	41.69	1000.64	2.58	1.29	.84
7. LOSS OF IDENTITY	39.72	6.98	48.38	1161.04	2.71	1.39	.85
8. FEARS	37.12	6.90	27.61	1142.64	2.83	1.38	.83

Intercorrelations Among the Independent Variables

The intercorrelations among the sub-parts of the CAS were all high, ranging from .50 to .95 which indicated significantly high relationships. This finding is supported in the principal components analysis discussed in connection with Tables 19 - 21. Table 17 presents this data.

Problem 1 (Group III)

Although H_1 will be repeated here the reader is referred to page 23 for a restatement of Problem.1.

H_1 : There is a significant relationship between human behavior as evidenced in four factors: Dominance, Submission, Love and Hostility and the psychological environment of early confinement as evidenced in eight factors: Physical Confinement, Psychological Confinement, Lack of Privacy, Lack of Familiar Physical Supports, Lack of Familiar Behavior Patterns, Lack of Familiar Interpersonal Relationships, Loss of Identity, and Fears.

Table 18 presents the data which supports this hypothesis in several instances. It will be noted that significant relationships exist between Dominance and the acceptance of (a) Psychological Confinement, (b) Lack of Privacy, and (c) Lack of Familiar Behavior Patterns. A significant correlation also was found to exist between Love and the acceptance of a Lack of Familiar Behavior Patterns.

Thus, H_1 can be accepted in the foregoing instances. It will be recalled that this was true for Group I but in no case true for Group II.

Principal Components Analysis, Rotation and Correlation of Factors (Early - Group III)

An analysis of the principal components for early confinement is shown in Table 19 with Tables 20 and 21 showing the results of the rotation and correlation of these factors.

Factor I for this group is composed similarly to Factor I for Group II. This is a general factor (6.36) and made up primarily of seven aspects of confinement acceptance. For this group the second factor (1.32) is made up primarily of the measurement for love, as was the case with Group II.

TABLE 16 INTERCORRELATION BETWEEN SUBSCORES OF DEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP III

SELF-DESCRIPTION I	1						
1. DOMINANCE (VS. SUBMISSION)							
2. LOVE (VS. HOSTILITY)	.38						

TABLE 17 INTERCORRELATION AMONG SUBSCORES OF INDEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP III

SELF-DESCRIPTION II	1	2	3	4	5	6	7	8
1. PHYSICAL CONFINEMENT								
2. PSYCHOLOGICAL CONFINEMENT.	.95**							
3. LACK OF PRIVACY	.89**	.91**						
4. LACK OF PHYSICAL SUPPORTS	.90**	.91**	.85**					
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.87**	.92**	.81**	.87**				
6. LACK OF FAM. INTERPERSONAL RELATIONSHIPS	.61**	.54**	.63**	.50**	.62**			
7. LOSS OF IDENTITY	.66**	.63**	.61**	.51**	.71**	.77**		
8. FEARS	.80**	.84**	.77**	.85**	.82**	.64**	.63**	

FOR DF = 24, R = .38 FOR P < .05 (*) AND .50 FOR P < .01 (**)

TABLE 18 CORRELATIONS BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES, EARLY CONFINEMENT, GROUP III

DEPENDENT VARIABLES SELF-DESCRIPTION I (LEARY)	INDEPENDENT VARIABLES: PSYCHOLOGICAL ENVIRONMENT SELF-DESCRIPTION II, CONFINEMENT ACCEPTANCE SCALE							
	1 PHYSICAL CONFINEMENT	2 PSYCHOLOGICAL CONFINEMENT	3 LACK OF PRIVACY	4 LACK OF PHYSICAL SUPPORTS	5 LACK OF FAM. BEH. PAT.	6 LACK OF FAM. INTERPER- REL.	7 LOSS OF IDENTITY	8 FEARS
1. DOMINANCE (VS. SUBMISSION)	.35	.40*	.43*	.35	.40*	.21	.07	.27
2. LOVE (VS. HOSTILITY)	.31	.30	.28	.28	.38*	.08	.09	.16

FOR DF = 24, R = .39 FOR P < .05(*) AND .50 FOR P < .01(**)

TABLE 19 PRINCIPAL COMPONENTS ANALYSIS FOR EARLY CONFINEMENT, GROUP III

VARIABLE	FACTOR I		FACTOR II		FACTOR III		FACTOR IV		FACTOR V		FACTOR VI	
	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE
1. DOMINANCE (VS. SUBMISSION)	.43	6.55	.85	1.32	-.17	0.71	.59	0.64	-.03	0.26	-.10	0.24
2. LOVE (VS. HOSTILITY)	.34		.72		-.36		-.48		.08		.04	
3. PHYSICAL CONFINEMENT	.95		.01		.13		-.07		-.11		.12	
4. PSYCHOLOGICAL CONFINEMENT	.96		.05		.20		-.03		-.12		-.01	
5. LACK OF PRIVACY	.82		.04		.10		.08		-.10		.28	
6. LACK OF PHYSICAL SUPPORTS	.91		.07		.32		-.06		.09		.00	
7. LACK OF FAMILIAR BEHAVIOR PAT.	.85		.05		-.01		-.09		-.04		-.21	
8. LACK OF FAM. INTERPER. REL.	.72		-.38		-.47		.17		.21		.18	
9. LOSS OF IDENTITY	.74		-.44		-.39		-.08		-.23		-.18	
10. FEARS	.89		-.15		.15		.00		.33		-.16	

TABLE 20 THE ROTATED FACTOR MATRIX INCLUDING SIX COMMON FACTORS*
EARLY CONFINEMENT, GROUP III

VARIABLES	FACTORS					
	I	II	III	IV	V	VI
1. DOMINANCE (VS. SUBMISSION)						
2. LOVE (VS. HOSTILITY)						
3. PHYSICAL CONFINEMENT	.89	.97		.96		
4. PSYCHOLOGICAL CONFINEMENT	.91					
5. LACK OF PRIVACY	.82					
6. LACK OF PHYSICAL SUPPORTS	.93					
7. LACK OF FAMILIAR BEHAVIOR PATTERNS	.78					
8. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS			-.88			
9. LOSS OF IDENTITY	.40		-.46		.53	
10. FEARS	.76					-.79

*LOADINGS WITH AN ABSOLUTE VALUE UNDER .40 ARE OMITTED.

TABLE 21 CORRELATION MATRIX OF SIX FACTORS: EARLY CONFINEMENT, GROUP III

FACTOR	I	II	III	IV	V	VI
I						
II	-.48					
III	.10	.55				
IV	-.37	.10	.42			
V	.20	-.30	.12	.25		
VI	-.02	.42	.51	.54	-.02	

Factors I and II are negatively correlated. Factor III, although not contributing a great deal to the total picture, is made up of dominance. All remaining factors contribute little to the understanding of the dynamics involved, as indicated by Table 19.

Statistical Summary of Scores of Late Confinement (Group III)

A summary of the scores will be found in Table 22. These were taken 60 - 65 hours following the onset of confinement and approximately 50 hours after the first set of scores were obtained, as was done with Group II. It will be noted that the reliabilities lie above .60.

Intercorrelation Between the Dependent Variables (Group III - Late)

The subscores from the Self-Description I (Leary) are shown in Table 23 to be slightly correlated at a value of .32, showing some degree of relationship. The early scores showed not much higher (.38) relationship.

Intercorrelations Among the Independent Variables (Group III - Late)

Table 24 shows that a high relationship was found to exist among all of the variables tested by the Confinement Acceptance Scale, with values ranging from .52 to .94. This was true for each testing and was borne out with each component analysis.

Problem 2 (Group III)

The reader is referred to page 29 for a restatement of the problem.

H₂: There is a significant relationship between human behavior as evidenced in four factors (see Problem 1, page 23) and the psychological environment of late confinement as evidenced in eight factors (see Problem 1).

Table 25 shows the correlations between the independent and dependent variables. It will be noted that most correlations, nine out of a possible sixteen, are statistically significant. It will be recalled that this was true for several (four) in this group in early confinement. Group II showed no high correlations. H₂ is supported in the foregoing nine instances.

TABLE 22 STATISTICAL SUMMARY: INDEPENDENT AND DEPENDENT VARIABLES, LATE CONFINEMENT, GROUP III

DEPENDENT VARIABLES	MEAN	STANDARD DEVIATION	VARIANCE	SUM OF SQUARES	S E OF MEASUREMENT	S E OF TEST MEAN	RELIABILITY (K-R 21)
SELF-DESCRIPTORS I (LEARY)							
1. DOMINANCE (VS. SUBMISSION)	51.60	4.91	24.17	580.00	3.04	.98	.62
2. LOVE (VS. HOSTILITY)	58.84	7.30	53.22	1277.36	3.21	1.46	.81
INDEPENDENT VARIABLES							
SELF-DESCRIPTORS II (CONFINEMENT ACCEPTANCE)							
1. PHYSICAL CONFINEMENT	34.18	8.01	64.14	1539.36	4.17	1.60	.73
2. PSYCHOLOGICAL CONFINEMENT	37.12	7.17	51.36	1232.64	2.94	1.43	.83
3. LACK OF PRIVACY	38.16	7.02	49.22	1181.36	2.60	1.40	.86
4. LACK OF PHYSICAL SUPPORTS	35.08	7.47	55.83	1339.84	2.91	1.49	.85
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	37.44	8.51	42.42	1018.16	2.60	1.30	.84
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	40.92	6.14	37.68	903.84	2.58	1.23	.82
7. LOSS OF IDENTITY	40.28	5.89	32.38	773.04	2.56	1.14	.80
8. FEARS	37.84	7.11	50.56	1213.36	2.77	1.42	.85

TABLE 23 INTERCORRELATION BETWEEN SUBSCORES OF DEPENDENT VARIABLES, LATE CONFINEMENT, GROUP III

SELF-DESCRIPTION I (LEARY)	1						
1. DOMINANCE (VS. SUBMISSION)							
2. LOVE (VS. HOSTILITY)	-.32						

TABLE 24 INTERCORRELATION AMONG SUBSCORES OF INDEPENDENT VARIABLES. LATE CONFINEMENT. GROUP III

SELF-DESCRIPTION II (C.A.S.)	1	2	3	4	5	6	7
1. PHYSICAL CONFINEMENT							
2. PSYCHOLOGICAL CONFINEMENT	.84**						
3. LACK OF PRIVACY	.84**	.86**					
4. LACK OF PHYSICAL SUPPORTS	.83**	.82**	.80**				
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.85**	.83**	.74**	.86**			
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	.69**	.77**	.82**	.70**	.79**		
7. LOSS OF IDENTITY	.58**	.86**	.52**	.61**	.74**	.69**	
8. FEARS	.92**	.90**	.79**	.87**	.87**	.70**	.82**

FOR DF = 24. R = .38 FOR P < .05(*) AND .50 FOR P < .01(**)

TABLE 25 CORRELATIONS BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES. LATE CONFINEMENT. GROUP III

DEPENDENT VARIABLES SELF-DESCRIPTION I (LEARY)	INDEPENDENT VARIABLES: PSYCHOLOGICAL ENVIRONMENT SELF-DESCRIPTION II. CONFINEMENT ACCEPTANCE SCALE							
	1 PHYSICAL CONFINEMENT	2 PSYCHOLOGICAL CONFINEMENT	3 LACK OF PRIVACY	4 LACK OF PHYSICAL SUPPORTS	5 LACK OF FAM. BEH. PAT.	6 LACK OF INTERPER. FAM. RELATION.	7 LOSS OF IDENTITY	8 FEARS
1. DOMINANCE (VS. SUBMISSIVENESS)	.45*	.44*	.40*	.35	.45*	.38	.30	.47*
2. LOVE (VS. HOSTILITY)	.42*	.38*	.15	.38	.56**	.20	.27	.44*

FOR DF = 24. R = .38 FOR P < .05(*) AND .50 FOR P < .01(**)

Principal Components Analysis, Rotation, and Correlation of Factors
(Late - Group III)

An analysis of the principal components for late confinement is shown in Table 26 with Tables 27 and 28 illustrating the rotation and correlation of the factors that were obtained. It will be noted that the major factor, Factor I, is made up of seven aspects of confinement acceptance. It is a large general factor (6.92) as has been the case for the first factor extracted in the three previous component analyses. As was the case in early confinement for this group, the second factor (1.03) was made up primarily of the love score. Again, the first two factors are negatively correlated. Factor III, although not contributing a great deal to the total picture, is made up of submission (the negative side of the continuum for the dominance-submission scale). Group III showed also that submissiveness was an important factor related to the large g factor, acceptance of confinement, the major contributor to the variance found in later confinement. Hostility was a variable that did not contribute to any factor; rather, the opposite, love, remained during confinement. This was not true of Group II. The psychological environmental makeup of Group III was basically love-submissiveness while Group II's was that of hostility-submissiveness.

C. GROUPS II AND III

Problem 3

Restatement of the Problem

Problem 3. To discover a significant difference in behavior early in and later in a period of confinement.

Two hypotheses are presented to discover these differences.

H₃: Behavior early in confinement is no different from behavior later in a period of confinement.

H₄: The distribution of scores representing changes in behavior from early confinement to later confinement will be uniform.

Problem 4

Restatement of the Problem

Problem 4. To discover a significant difference in the acceptance of the psychological environment of confinement early in and later in a period of confinement.

TABLE 26 PRINCIPAL COMPONENTS ANALYSIS FOR LATE CONFINEMENT, GROUP III

VARIABLE	FACTOR I		FACTOR II		FACTOR III		FACTOR IV		FACTOR V		FACTOR VI	
	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE	LOADING	VARIANCE
1. DOMINANCE (VS. SUBMISSION)	.52	6.92	.40	1.03	-.74	0.73	.11	.61	.07	0.31	.03	0.12
2. LOVE (VS. HOSTILITY)	.46		.81		.30		.00		-.18		-.07	
3. PHYSICAL CONFINEMENT	.94		-.01		.02		-.25		.12		-.08	
4. PSYCHOLOGICAL CONFINEMENT	.97		-.06		.04		-.11		.04		.05	
5. LACK OF PRIVACY	.87		-.32		-.15		-.16		-.21		-.19	
6. LACK OF PHYSICAL SUPPORTS	.92		-.09		.12		-.20		.14		.17	
7. LACK OF FAMILIAR BEHAVIOR PAT.	.95		.12		.13		.10		-.04		.14	
8. LACK OF FAM. INTERPERSONAL REL.	.84		-.27		-.07		.26		-.36		.08	
9. LOSS OF IDENTITY	.73		-.10		.16		.80		.23		-.10	
10. FEARS	.93		.04		.02		-.15		.12		-.11	

TABLE 27 THE ROTATED FACTOR MATRIX INCLUDING SIX COMMON FACTORS* LATE CONFINEMENT, GROUP III

VARIABLES	FACTORS					
	I	II	III	IV	V	VI
1. DOMINANCE (VS. SUBMISSION)						
2. LOVE (VS. HOSTILITY)	.90	.97	-.86			
3. PHYSICAL CONFINEMENT	.84					
4. PSYCHOLOGICAL CONFINEMENT	.74					
5. LACK OF PRIVACY	.90					
6. LACK OF PHYSICAL SUPPORTS	.86			.40		-.40
7. LACK OF FAMILIAR BEHAVIOR PATTERNS	.47				-.79	
8. LACK OF FAM. INTERPER. RELATIONSHIPS				.90		
9. LOSS OF IDENTITY						
10. FEARS	.61					-.35

* LOADINGS WITH AN ABSOLUTE VALUE UNDER .40 ARE OMITTED.

Two hypotheses are presented:

H₅: The acceptance of the psychological environment representative of confinement is no different early in confinement than later in a period of confinement.

H₆: The distribution of scores representing changes in feeling toward confinement from early confinement to later confinement will be uniform.

Group II

Table 29 illustrates the values of *t* which tested the significance of the differences in mean scores for early and late confinement. It shows that the means or average scores did not change significantly. The individuals within the group changed their scores but the group composition remained about the same. Feelings were somewhat stable for each group. Prior statistical analysis showed, however, that hostility did increase in this group, although it was not overtly expressed. H₅ and H₆ are accepted.

Table 30 presents Chi-square values for the variables as measured by the Self Description I Leary and the CAS. It shows that in three instances; namely, acceptance of physical confinement (6.43), the lack of physical supports (12.71), and in fears (6.14), the percentage changes were statistically different from that which might be expected by chance. It is interesting to note that 68% of the group decreased their earlier acceptance of the lack of physical supports after they had experienced being without them. Not significant but of interest is the fact that 55% lowered their acceptance of lack of privacy. H₄ cannot be accepted. H₆ can be accepted in the three foregoing instances. In the case where the changes are uniform the percentage changes in each approach a 33 - 33 - 33 distribution (i. e., the probability of a score falling into any one of the three categories of increase, decrease, and no change is the same).

Group III

Tables 31 and 32 present data for Group III in the same manner as they are presented for Group II in Tables 29 and 30. As with Group II, the *t*-tests did not find any differences that were statistically significant, as indicated in Table 31. As before, while the people in the group did change, the group composition remained about the same. H₅ and H₆ can be accepted. It is interesting to note that the mean or average scores for the groups were different and that this difference did increase during confinement. It did not reach statistical significance, however.

TABLE 28 CORRELATION MATRIX OF SIX FACTORS: LATER CONFINEMENT, GROUP III

FACTOR	I	II	III	IV	V
I					
II	-.40				
III	.43	.13			
IV	-.11	-.26	.37		
V	-.17	.56	-.26	-.18	
VI	-.16	.39	-.04	.20	.32

TABLE 29 DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES, GROUP II

VARIABLES	t VALUE
SELF-DESCRIPTION I --(LEARY)	
1. DOMINANCE (VS. SUBMISSION)	1.16
2. LOVE (VS. HOSTILITY)	1.93*
SELF-DESCRIPTION II -- (CONFINEMENT ACCEPTANCE)	
1. PHYSICAL CONFINEMENT	.69
2. PSYCHOLOGICAL CONFINEMENT	.15
3. LACK OF PRIVACY	.20
4. LACK OF PHYSICAL SUPPORTS	1.65
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	1.47
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	.33
7. LOSS OF IDENTITY	.47
8. FEARS	.37
FOR df = 42, t = 1.66 AT .05 LEVEL (*) AND 2.42 AT .01 LEVEL (**)	

TABLE 30 PERCENT IN SAMPLE WHO CHANGED SCORES DURING CONFINEMENT TESTING, GROUP II (N = 22)

VARIABLE	PERCENTAGE			
	DECREASE	NO CHANGE	INCREASE	χ^2
DEPENDENT VARIABLES SELF-DESCRIPTIONS I (LEARY)				
1. DOMINANCE (VS. SUBMISSION)	36	27	36	.43
2. LOVE (VS. HOSTILITY)	41	41	18	2.43
INDEPENDENT VARIABLES SELF-DESCRIPTIONS II (CAS)				
1. PHYSICAL CONFINEMENT	41	9	50	6.43*
2. PSYCHOLOGICAL CONFINEMENT	36	23	41	1.29
3. LACK OF PRIVACY	55	18	27	5.00
4. LACK OF PHYSICAL SUPPORTS	68	14	18	12.71**
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	46	27	27	1.57
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	23	36	41	1.29
7. LOSS OF IDENTITY	41	18	41	2.43
8. FEARS	46	9	46	6.14*
FOR 2 df, $\chi^2 = 5.99$ FOR $p < .05(*)$ AND 9.21 FOR $p < .01(**)$				

TABLE 31 DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES, GROUP III

VARIABLE	t VALUE
SELF-DESCRIPTION I (LEARY)	
1. DOMINANCE (VS. SUBMISSION)	1.84
2. LOVE (VS. HOSTILITY)	1.02
SELF-DESCRIPTION II -- (CONFINEMENT ACCEPTANCE)	
1. PHYSICAL CONFINEMENT	1.26
2. PSYCHOLOGICAL CONFINEMENT	.14
3. LACK OF PRIVACY	.98
4. LACK OF PHYSICAL SUPPORTS	1.23
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	1.06
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	.03
7. LOSS OF IDENTITY	.41
8. FEARS	.56
FOR df = 48, t = 1.98 AT .05 LEVEL (*) AND 2.42 AT .01 LEVEL (**)	

Table 32 presents the Chi-square values for Group III. It will be noted that the values for nine of the ten variables reached statistical significance. Of interest is the fact that 56% increased their Dominance score. This supports the shelter manager's statements that this group became more difficult to manage. Group III, like Group II, lowered their acceptance of confinement, as measured by the CAS, in several instances that are noteworthy; namely, acceptance of lack of privacy (68%) and lack of familiar physical supports (68%). Even so, these changes were not sufficient to significantly change the mean average. H_4 and H_6 can be accepted for Group III in the nine instances.

Problem 5

Restatement of the Problem

Problem 5. To discover significant differences in behavior in two types of shelter stays, one providing minimum psychological support and the other supplementary psychological support.

To discover these differences, two hypotheses are presented:

H_7 : Behavior early in confinement in a shelter with minimum psychological support is no different from behavior early in confinement in a shelter which includes selected supplementary psychological supports.

H_8 : Behavior later in confinement in a shelter with minimum psychological support is no different from behavior later in confinement in a shelter which includes selected supplementary psychological supports.

Problem 6

Restatement of the Problem

Problem 6. To discover significant differences in the psychological environment of two types of shelter stays, one providing minimum psychological support and the other selected supplementary psychological supports.

To discover these differences, two hypotheses are presented:

H_9 : The psychological environment of early confinement in a shelter stay with minimum psychological support is no different from the psychological environment of early confinement in a shelter with selected supplementary psychological support.

H_{10} : The psychological environment of later confinement for a shelter stay with minimum psychological support is no different from the psychological environment of later confinement in a shelter with selected supplementary psychological supports.

Table 33 presents the t value that resulted when t - tests were applied to the means of the variables for Groups II and III for early confinement and late confinement. Thus the groups were compared with each other for the early and late periods. The table shows that four variables were significantly different for the early period while three were for the late period. This indicates that the groups were different as measured by those variables. $H_7 - H_{10}$ are not supported in these instances. An inspection of the mean scores presented in Table 34 will convey some of the relationships among the means for Groups I, II and III. Figures 1 - 12 have been drawn to present visually the distribution of scores for the three groups.

Some discussion relating to Problems 5 and 6 will be found earlier in this report in connection with the four principal components analyses that were carried out. It will be recalled that these extracted different combinations of components. For Group II, Factor I, a large G-factor, was made up of measurements indicating an acceptance of confinement with submissiveness. Factor II was made up of dominance and love measurements in the early period of confinement but in the later period this factor was made up of scores from the opposite ends of the continuum, namely, submission and hostility. Group III showed also that submissiveness was an important aspect of Factor I, the large G-factor which contained measurements of acceptance of confinement as the major contributors to the variance. Hostility did not emerge, rather the opposite, love, remained throughout confinement. Group III's configuration for late confinement was basically love-submissiveness while Group II's was primarily hostility-submissiveness.

Related Analyses

Analyses of variances were performed to determine whether or not the three groups differed significantly. Group I was the psychiatric hospital population of "near-normal" first admission patients; Group II was the shelter population

TABLE 32 PERCENT IN SAMPLE WHO CHANGED SCORES DURING CONFINEMENT TESTING, GROUP III (N = 25)

VARIABLE	PERCENTAGE			
	DECREASE	NO CHANGE	INCREASE	χ^2
DEPENDENT VARIABLES SELF-DESCRIPTIONS I (LEARY)				
1. DOMINANCE (VS. SUBMISSION)	28	16	56	8.83*
2. LOVE (VS. HOSTILITY)	52	8	40	8.13*
INDEPENDENT VARIABLES SELF-DESCRIPTIONS II (CAS)				
1. PHYSICAL CONFINEMENT	64	4	32	14.13**
2. PSYCHOLOGICAL CONFINEMENT	48	12	40	5.83
3. LACK OF PRIVACY	68	12	20	14.38**
4. LACK OF PHYSICAL SUPPORTS	68	0	32	15.83**
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	60	16	24	8.83*
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	48	8	44	7.63*
7. LOSS OF IDENTITY	52	4	44	10.38**
8. FEARS	40	8	52	8.13*

FOR $df = 48$, $t = 1.66$ AT .05 LEVEL (**) AND 2.41 AT .01 LEVEL (**)

TABLE 33 DIFFERENCES BETWEEN MEANS OF TEST SCORES FOR GROUP II VS. GROUP III FOR EARLY CONFINEMENT AND FOR LATE CONFINEMENT

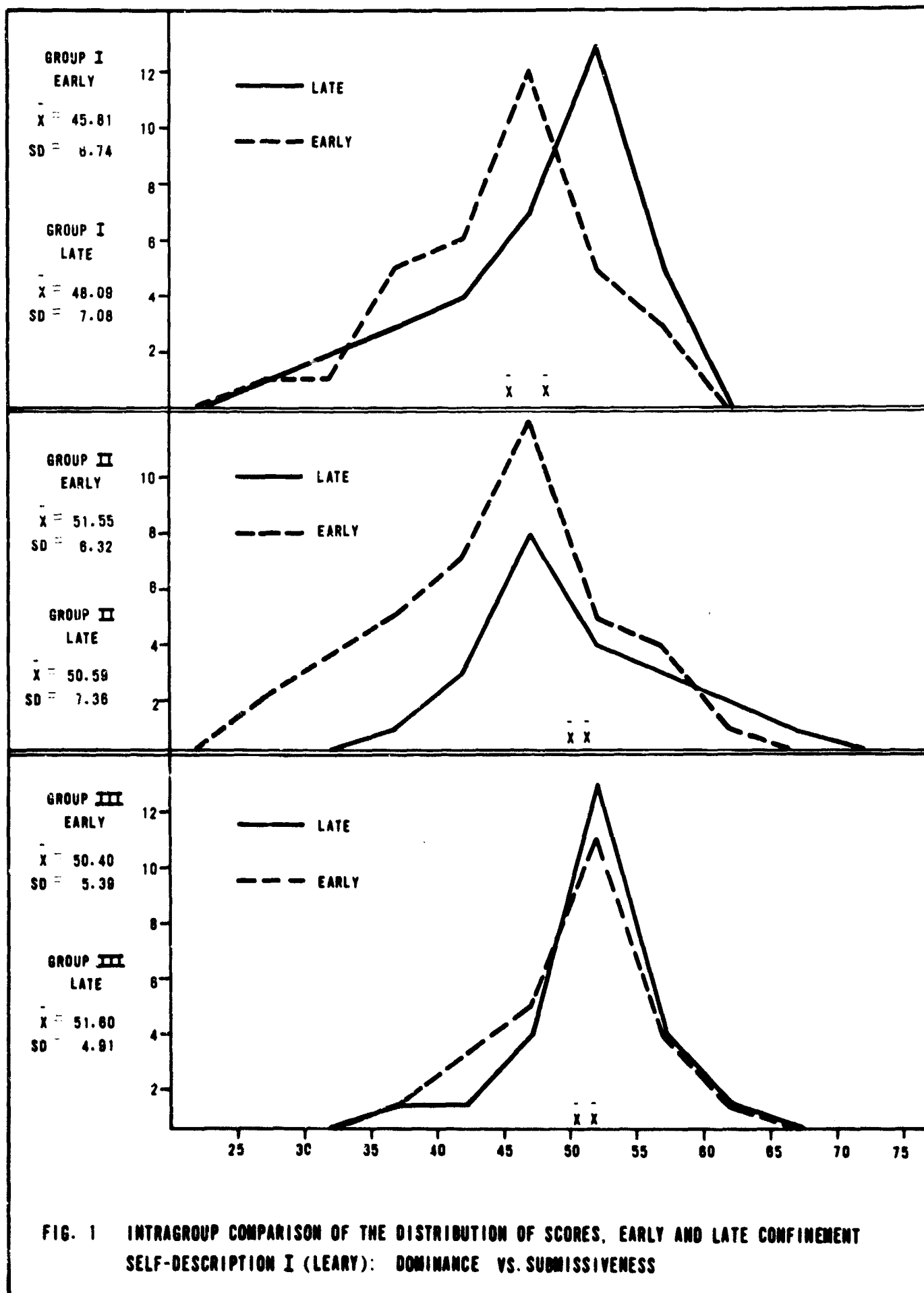
VARIABLE	EARLY t VALUE	LATE t VALUE
SELF-DESCRIPTION I -- LEARY (BEHAVIOR)		
1. DOMINANCE (VS. SUBMISSION)	.68	.55
2. LOVE (VS. HOSTILITY)	2.04*	4.23**
SELF-DESCRIPTION II -- (CONFINEMENT ACCEPTANCE)		
1. PHYSICAL CONFINEMENT	1.66*	.92
2. PSYCHOLOGICAL CONFINEMENT	2.02*	1.76**
3. LACK OF PRIVACY	2.21*	1.76**
4. LACK OF PHYSICAL SUPPORTS	.95	.95
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	1.50	1.23
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	1.24	1.01
7. LOSS OF IDENTITY	1.38	1.45
8. FEARS	.78	.93

FOR $df = 48$, $t = 1.66$ AT .05 LEVEL (**) AND 2.41 AT .01 LEVEL (**)

TABLE 34 ANALYSES OF VARIANCES FOR GROUPS I, II AND III: EARLY AND LATE CONFINEMENT (N = 28, 22 AND 25)

	EARLY CONFINEMENT			LATE CONFINEMENT		
	MEAN	SD	F RATIO	MEAN	SD	F RATIO
DEPENDENT VARIABLES						
SELF-DESCRIPTION I (LEARY)						
1. DOMINANCE (VS. SUBMISSION)	45.82 51.55 50.40	6.75 6.32 5.39	6.74**	48.09 50.58 51.80	7.08 7.36 4.92	2.21
2. LOVE (VS. HOSTILITY)	53.79 52.46 57.00	8.13 5.81 9.25	2.08	57.03 50.91 58.84	8.51 5.52 7.30	7.33**
INDEPENDENT VARIABLES						
SELF-DESCRIPTIONS II (CONFINEMENT ACCEPTANCE)						
1. PHYSICAL CONFINEMENT	34.46 31.50 35.24	11.84 5.80 7.82	1.05	38.30 32.09 34.16	15.35 7.39 8.01	2.10
2. PSYCHOLOGICAL CONFINEMENT	32.70 33.59 37.00	12.67 5.08 8.47	1.60	35.38 33.46 37.12	12.76 7.12 7.17	.81
3. LACK OF PRIVACY	27.08 35.82 40.00	11.16 6.59 6.34	16.70**	30.21 35.59 38.16	12.45 6.85 7.02	6.35**
4. LACK OF PHYSICAL SUPPORTS	25.12 34.77 36.40	8.51 4.91 8.75	18.64**	28.24 33.09 35.08	11.41 6.86 7.47	3.04*
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	22.84 36.14 38.32	11.37 4.71 5.26	30.88**	22.18 35.18 37.44	8.78 6.05 6.51	35.92**
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	22.30 38.88 40.88	8.12 5.74 8.48	61.02**	25.30 38.88 40.82	9.20 7.07 6.14	34.88**
7. LOSS OF IDENTITY	15.91 37.05 38.72	9.32 8.53 8.88	78.27**	17.94 37.59 40.28	10.40 6.88 5.69	64.10**
8. FEARS	28.76 35.55 37.12	10.07 8.86 8.90	8.28**	34.33 35.91 37.84	11.65 7.01 7.11	1.02

FOR DF = 2 AND 72, F = 3.13 FOR P < .05(*) AND 4.92 FOR P < .01(**)



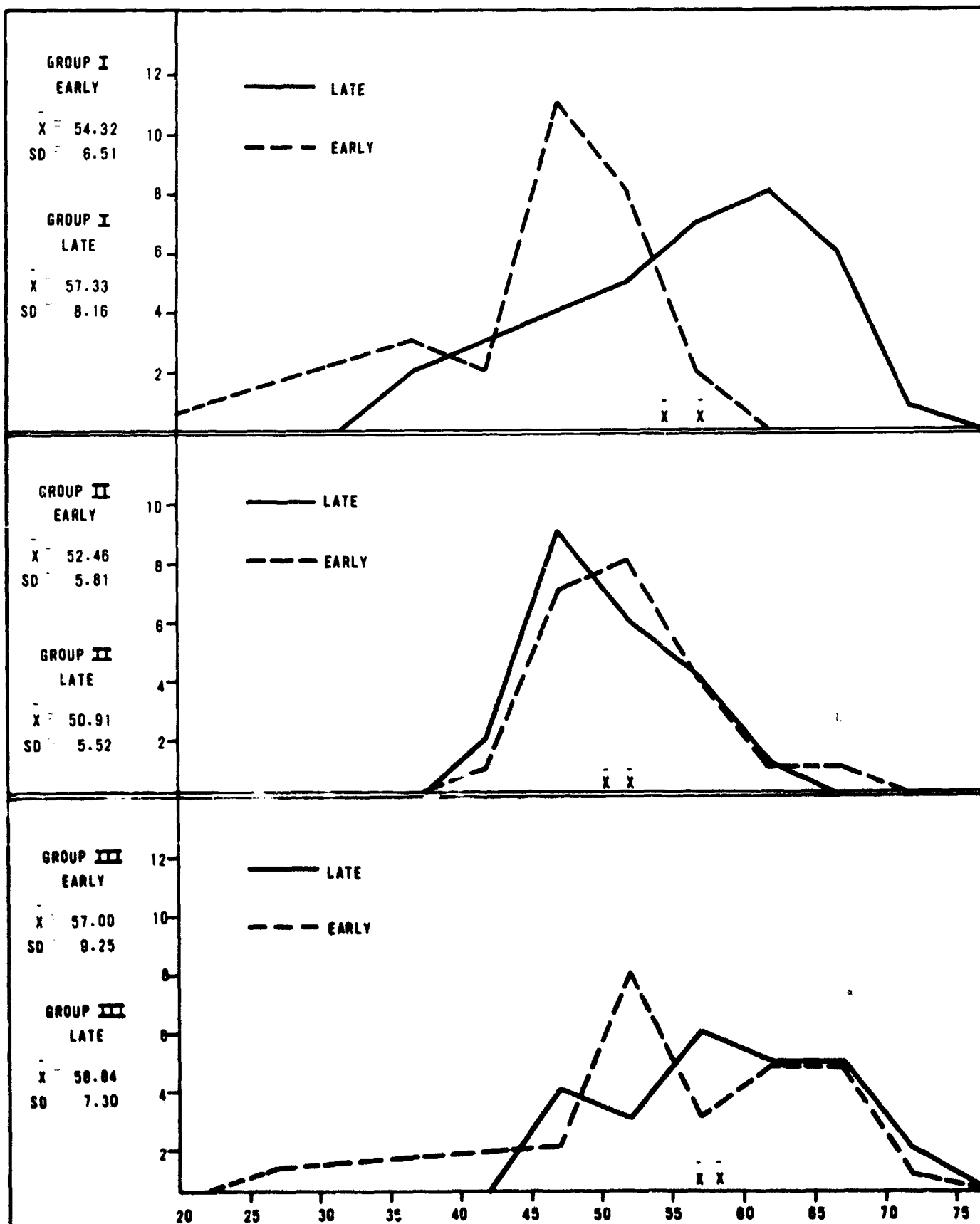


FIG. 2 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES. EARLY AND LATE CONFINEMENT SELF-DESCRIPTION I (LEARY): LOVE (VS. HOSTILITY)

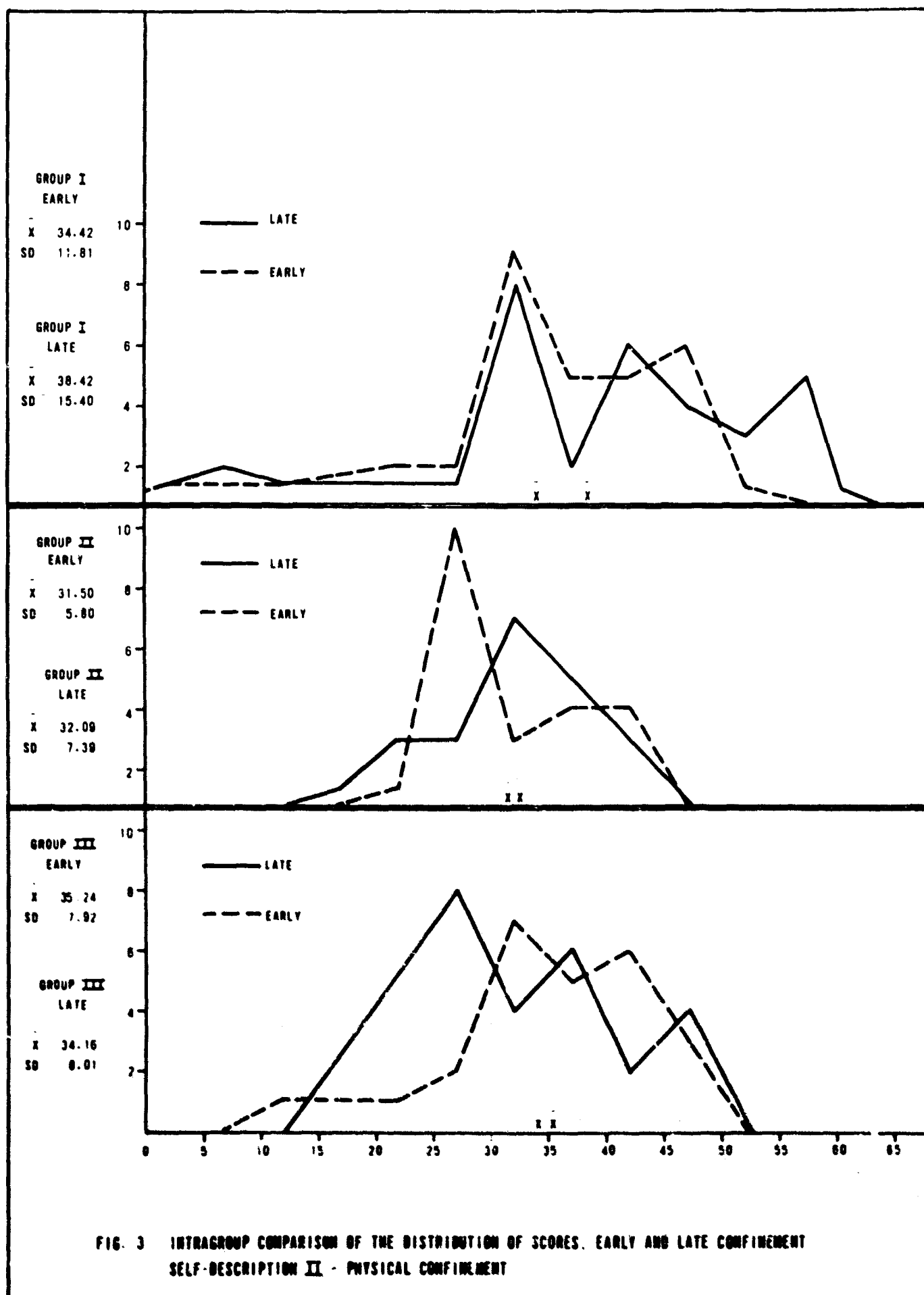
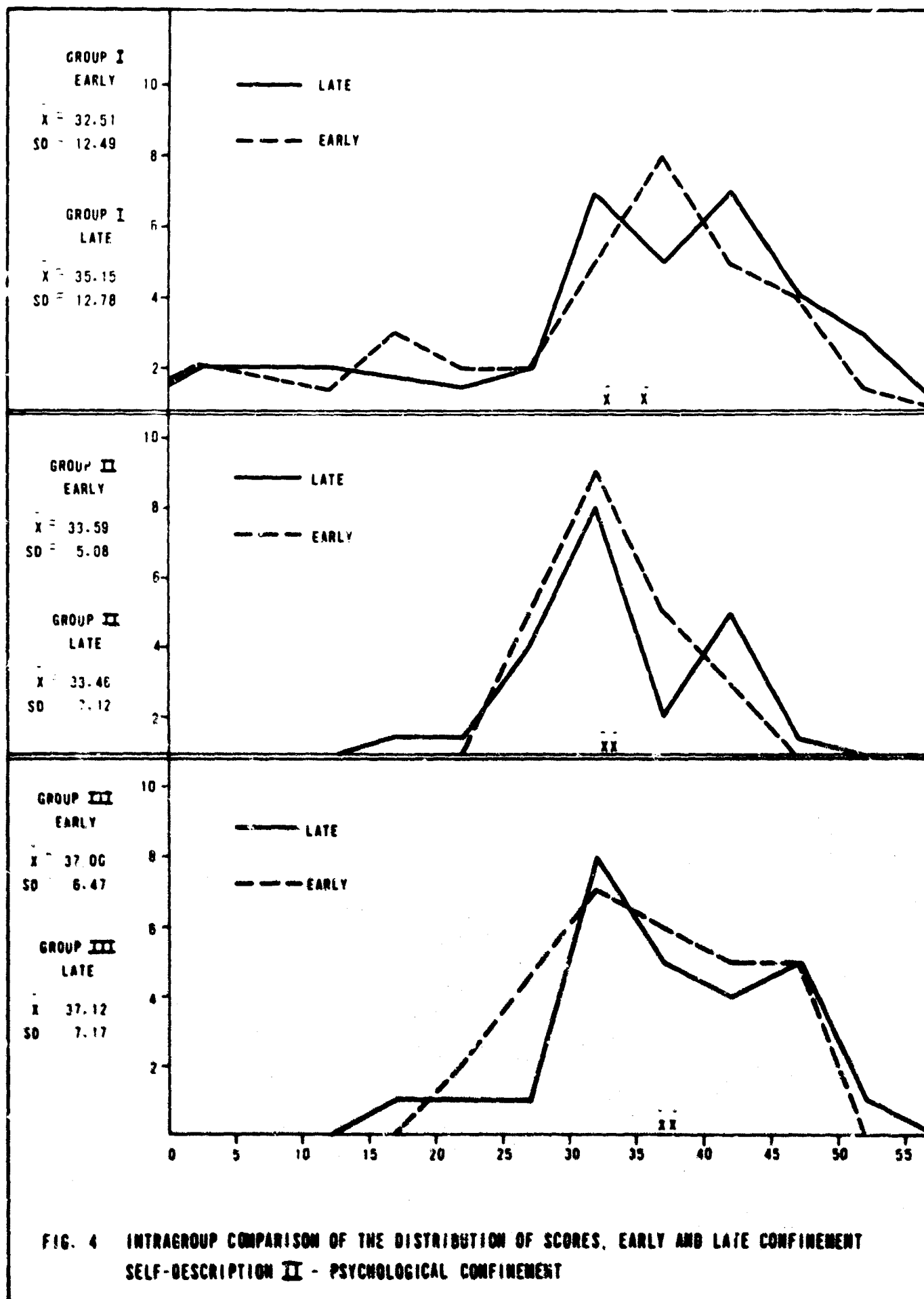


FIG. 3 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT
SELF-DESCRIPTION II - PHYSICAL CONFINEMENT



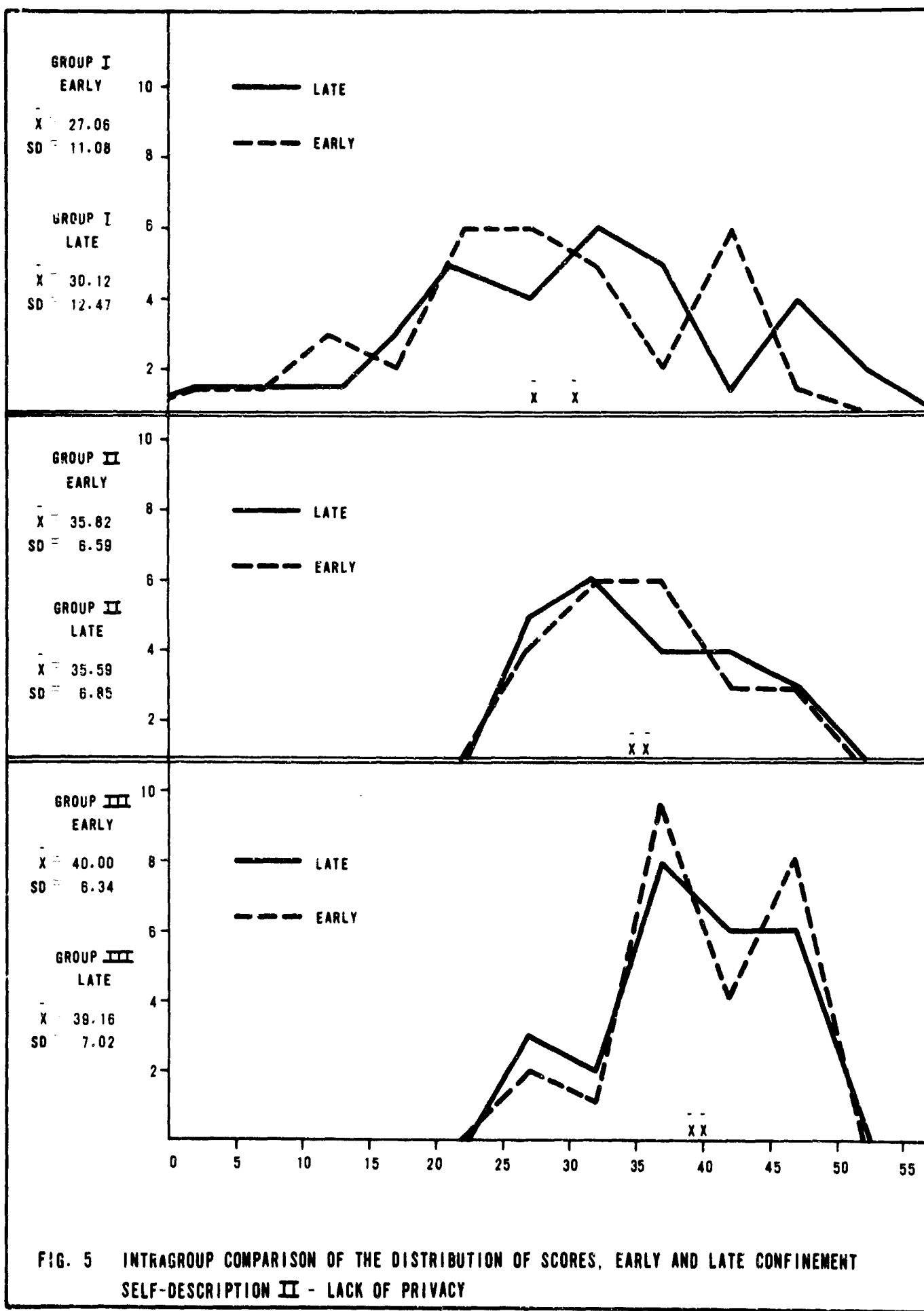


FIG. 5 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT SELF-DESCRIPTION II - LACK OF PRIVACY

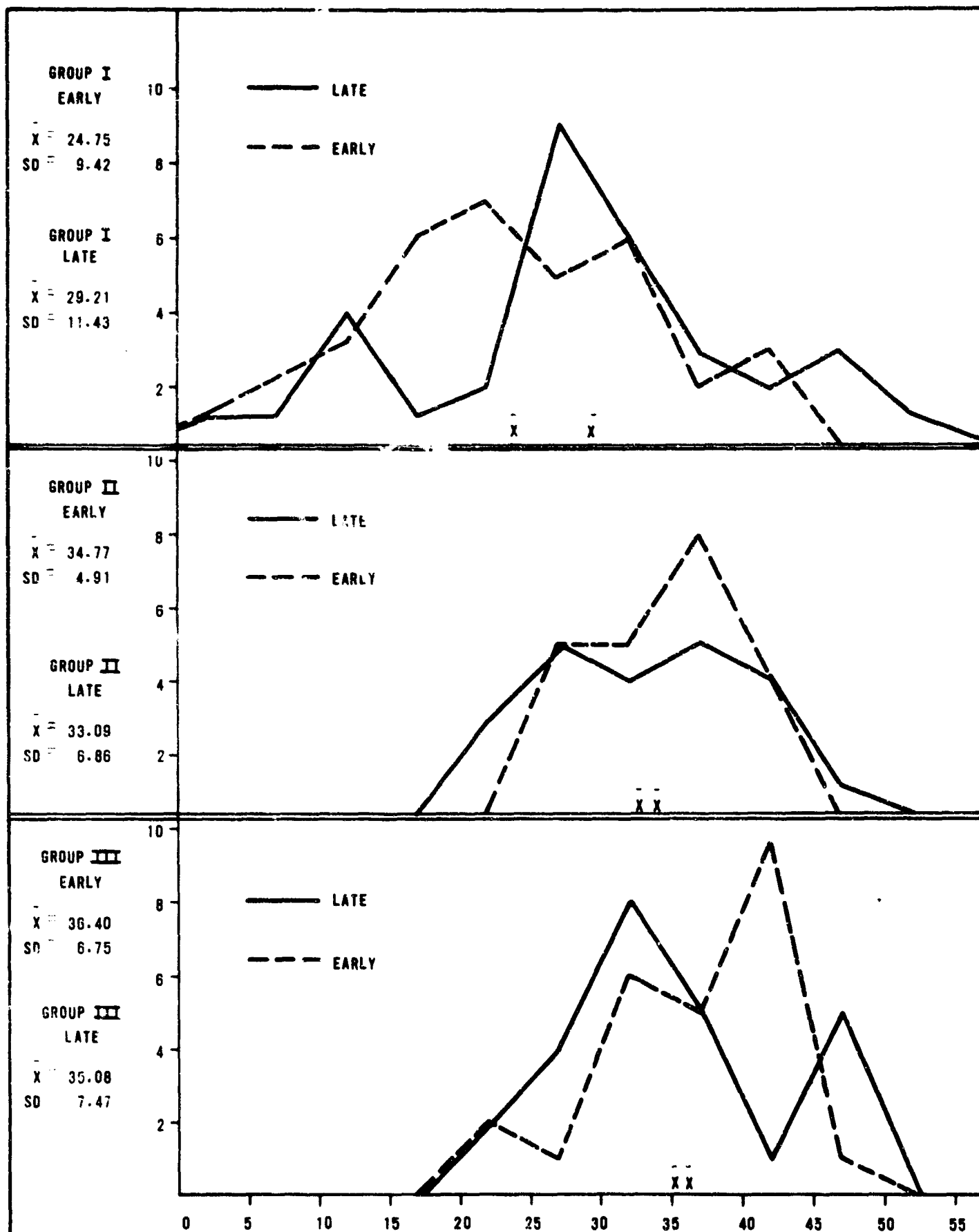
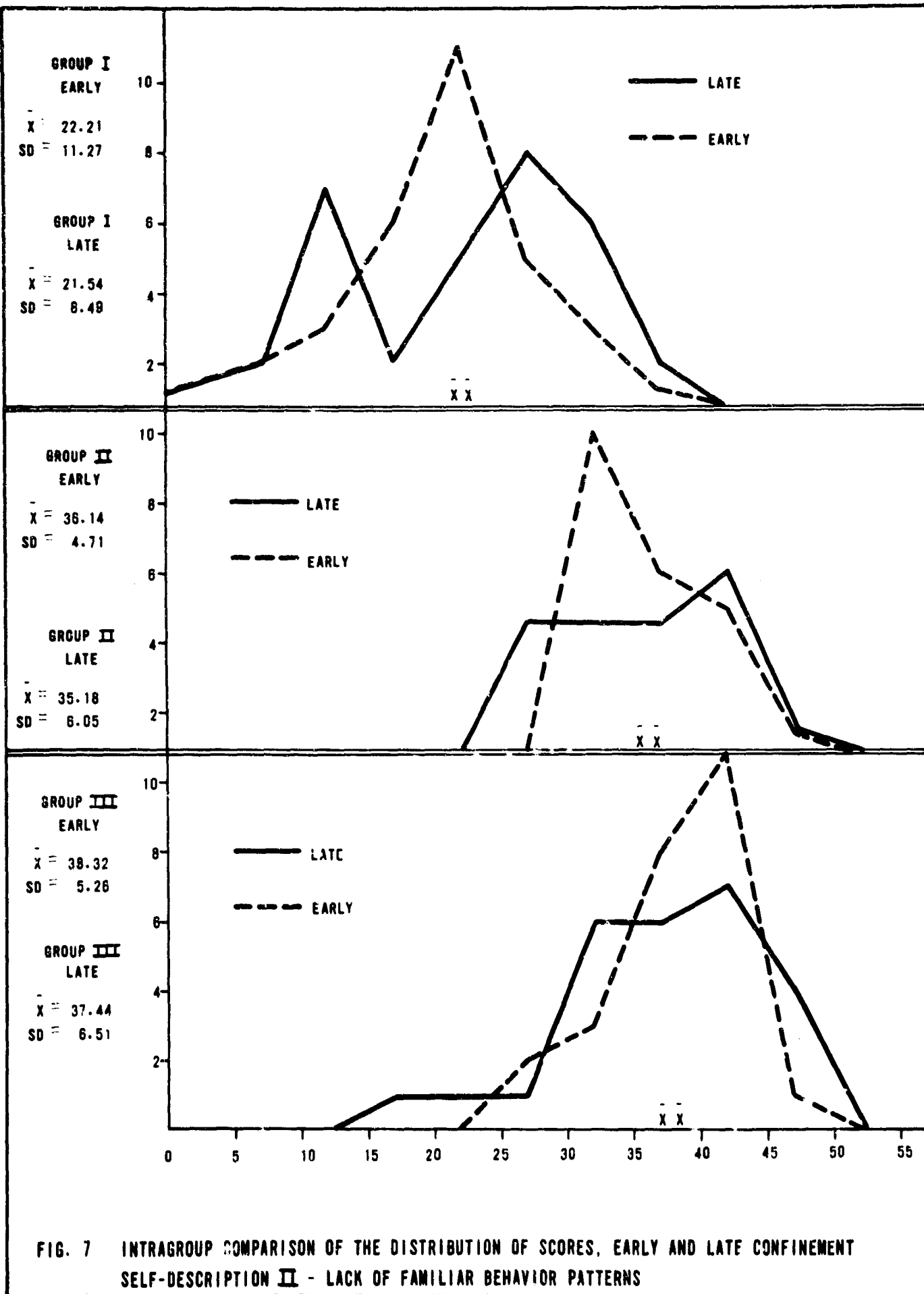


FIG. 6 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT
SELF-DESCRIPTION II - LACK OF PHYSICAL SUPPORTS



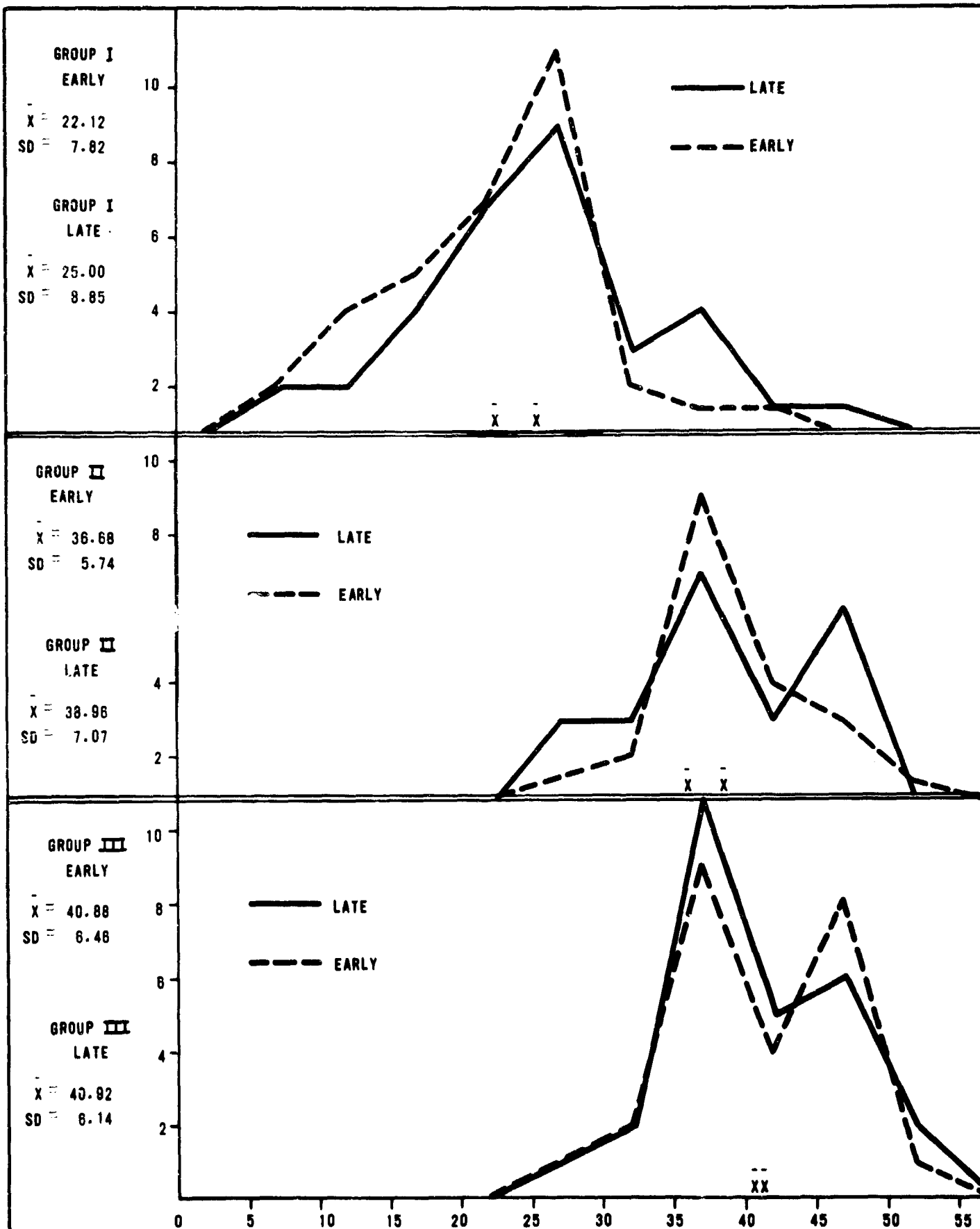


FIG. 8 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT SELF-DESCRIPTION II - LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS

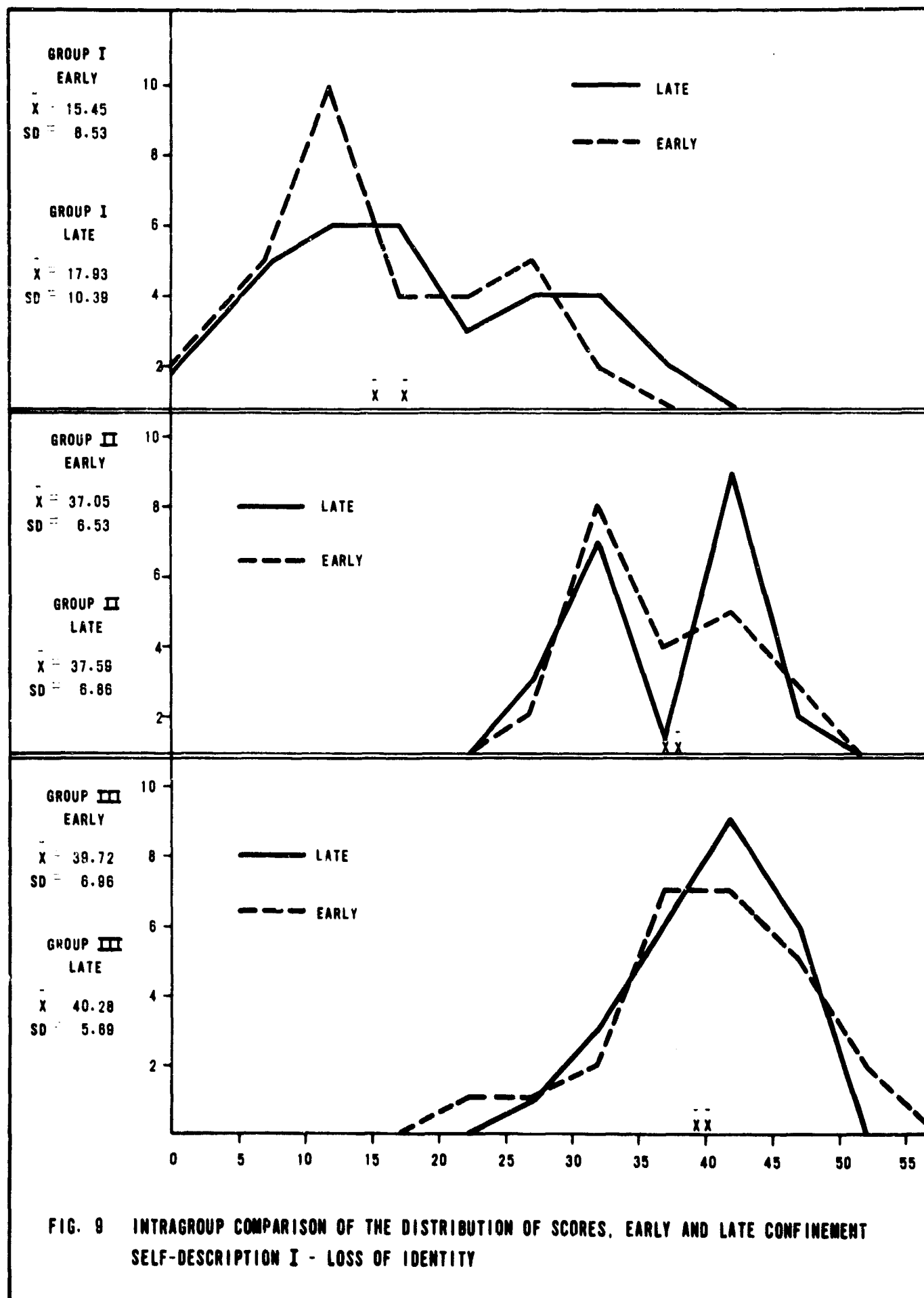


FIG. 9 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT SELF-DESCRIPTION I - LOSS OF IDENTITY

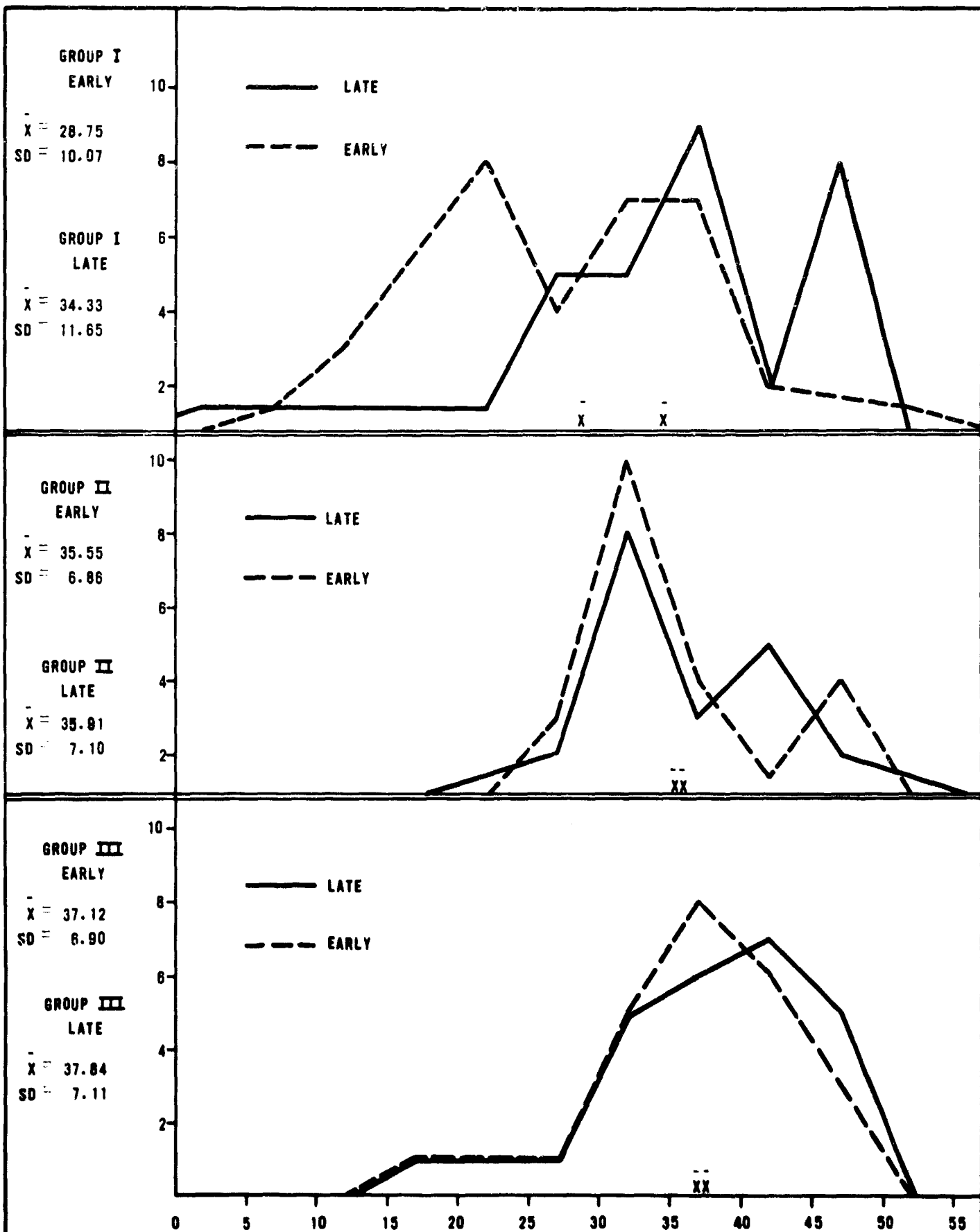


FIG. 10 INTRAGROUP COMPARISON OF THE DISTRIBUTION OF SCORES, EARLY AND LATE CONFINEMENT SELF-DESCRIPTION II - FEARS

that received no supplementary psychological supports; while Group III included several such supports (provision for family unity; physical supports that facilitate group action, e. g. , movable benches; positive verbal reinforcement (for Group II, negative reinforcement) of aspects of confinement, e. g. , crowding, group activity, privacy, etc. , and more structure to prevent or allay development of fears).

F-ratios are presented on Table 34. For early confinement, the means for the Self Descriptions-I (Leary) were significantly different for the Dominance scores (6.72) but not the Love scores, with F-ratios of 6.74 and 2.09, respectively. An inspection of the means for each group showed the hospital group to have considerably lower scores for Dominance and hence were more submissive than the shelter groups. However, as the period of confinement continued, the hospital group became less submissive to the extent that the three groups' scores were not significantly different in later confinement.

On the other hand, the mean for the Love score for the three groups did not differ significantly at the beginning of confinement with $F = 2.09$ but did after a period when the F-ratio reached a value of 7.33. It can be noted that Groups I and III's mean score was raised while Group II's mean score dropped from 52.46 to 50.91. It will be recalled that the instrument to measure the foregoing dependent variable (Self-Descriptions I-Leary) was exactly the same for all three groups.

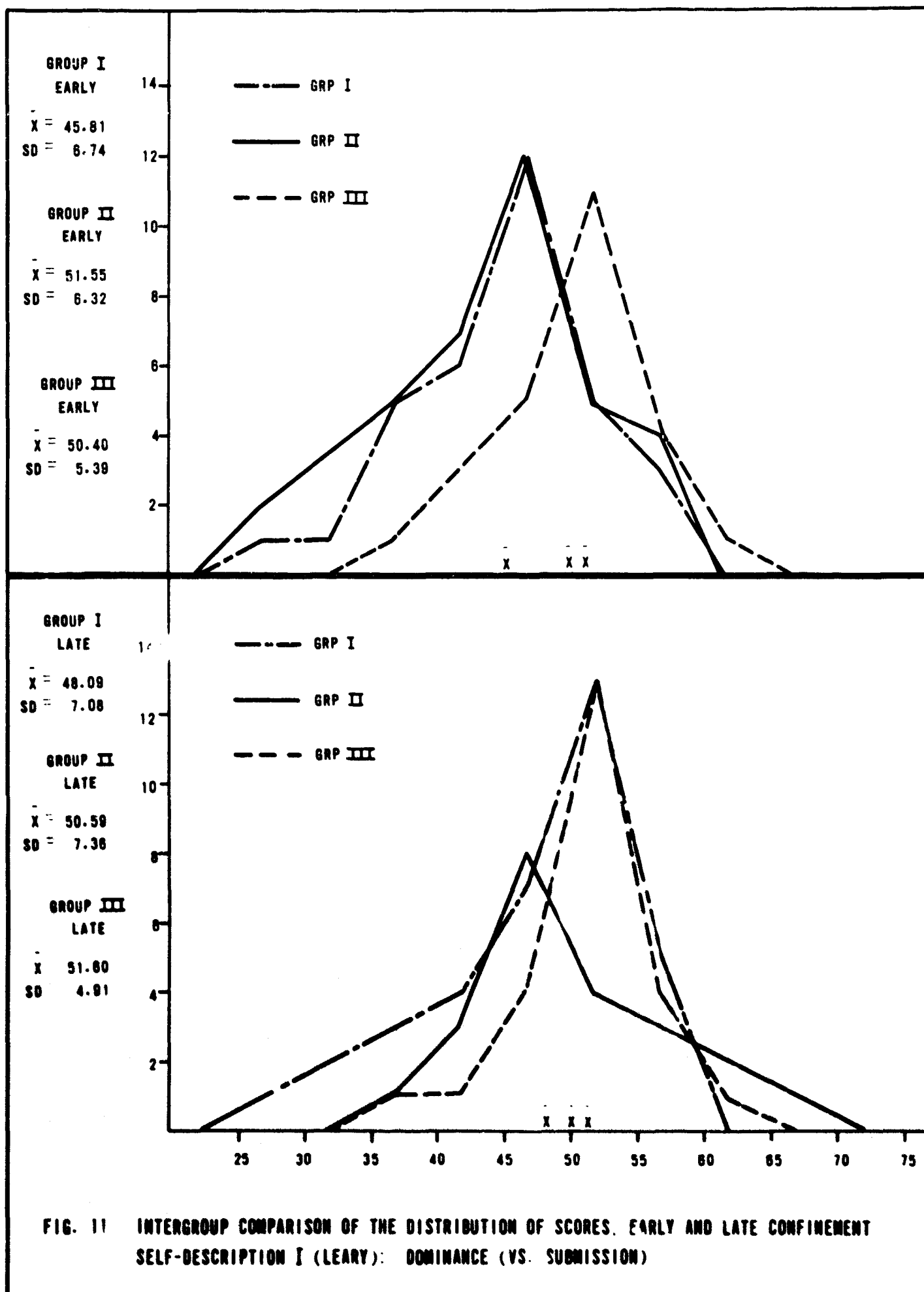
The CAS that measured the independent variables was the same (Form B) for Groups II and III while Group I had Form A. Some question therefore exists regarding the comparability of the two forms. The investigator has reason to believe they are similar enough to gain insights into the problem under discussion but perhaps not to prove hypotheses. T-tests were used for the latter as discussed earlier.

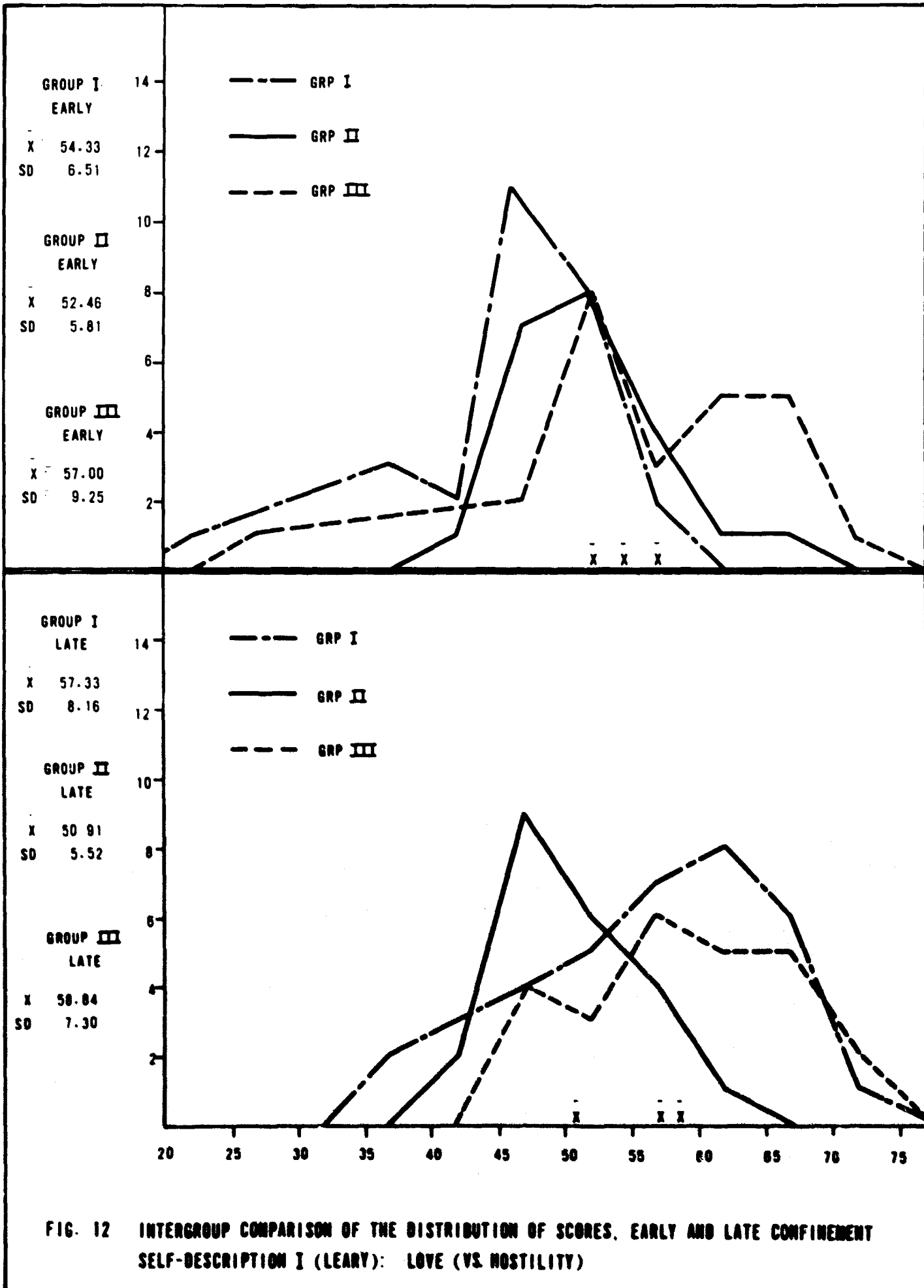
It will be noted in Table 34 that all but five (early and late Physical and Psychological Confinement mean scores and mean scores for late Fears) of the sixteen factors for early and late confinement reached significance. From this it would seem that the groups were quite similar in their acceptance of the physical and psychological confinement at early and late stages. In addition, Group I, the hospital group, whose mean score for Fear in early confinement was quite low (28.76), adjusted to the extent that the mean score was raised considerably (to 34.33) to make it comparable to the mean scores for Groups

II and III. This finding is important when one remembers the special care that is taken in psychiatric hospitals (see Wright & Hambacher, 1965, pages 145 to 147) to help the patients adjust to confinement.

Fears related to confinement, as expressed in the study, seemed to center upon a lack of structure for the individual. He wanted to know what to expect. What was going to happen to him? What was the routine going to be? Who would tell people what to do? Which people should he try to make friends with, or should he be passive? Where would he get something to eat? to drink? Etc., etc. Fears are diminished as the individual learns and understands the requirements of shelter confinement. Thus, what is done early in the shelter stay, especially by the shelter management, will have a direct bearing on an individual's adjustment. The shelter manager in this study was directed to provide positive verbal reinforcement for Group III and little, negative, or no reinforcement for Group II. But, in both he was to do nothing that differed from normal shelter procedure other than to minimize and maximize opportunities to make the shelter confinement meaningful. An example of how this took place with the hospitals is given in an answer made by one of the nurses when asked what first statements were made to a new patient to welcome him (her) and to help him (her) adjust to the new environment (Wright & Hambacher, 1965, p. 145). She said that they "Welcome patients with a smile and tell them we are here to help them get well and then orient them to the physical set-up of the unit."

As indicated in the foregoing, specific things can be done to acquaint an individual with new circumstances. When these are done, they give that individual psychological support. They are not necessary to his life but they make his adjustment easier. For the hospital group and for Group III the provision for these supports resulted in higher scores in the measurement of adjustment to confinement. This, along with providing for an individual to be with members of his family in the shelter, was a source of psychological support for Group III which adjusted better to shelter confinement than did Group II.





CHAPTER IV

TREATMENT AND SUMMARY OF CATEGORICAL DATA

The major effort of the current study was focused upon the statistical analysis of data which is reported in Chapter V. In addition, supplementary information was obtained, according to plan, through observation and data inference. Most of the resulting data were in a form that could not be analyzed statistically. However, this insightful information is important and so has been categorized and is reported in this chapter.

Supplementary information will be presented in the following sequence:

Pre- and Post-Confinement Feelings on Factors Most Bothersome

Leadership Preference and Shelteree Least Preferred

Use of Shelter Space

Methods of Distributing Food

Reactions of Split Families

Needs of Special Groups

Items Taken Into the Shelters

Items Desired in a Shelter Stay

Shelter Manager's Comments

Shelter Manager's Debriefing Remarks

Decrements in Performance of Mental Tasks

Delayed Expressions of Stress

Pertinent Information Regarding Shelter Experience and Impact

Pre- and Post-Confinement Feelings
on Factors Most Bothersome

Subjects in Groups II and III were asked to choose which of nineteen factors they expected to be most annoying in confinement. (See Appendix B.) Following the shelter stay, each subject checked and ranked the factors they actually found to be most bothersome. As can be seen from Figures 13 and 14, the subjects' expectations concerning annoying factors in shelter living were unrealistic. Sleeping difficulties were relatively unanticipated by both groups. In addition, both groups underestimated the effect the lack of water for washing would have. One explanation for the overestimation of the effect of lack of

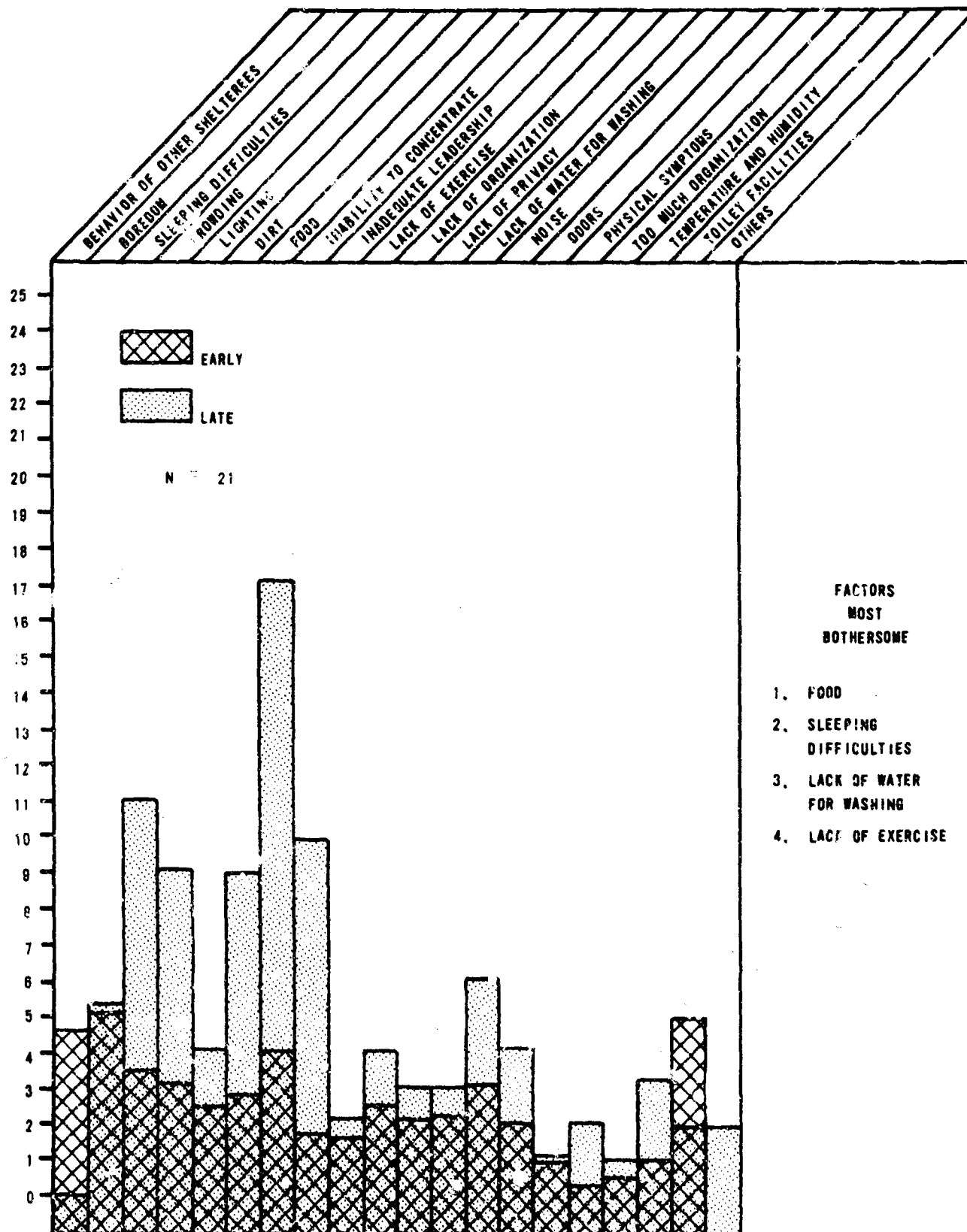


FIG. 13 EARLY AND LATE CONFINEMENT FEELINGS - GROUP II

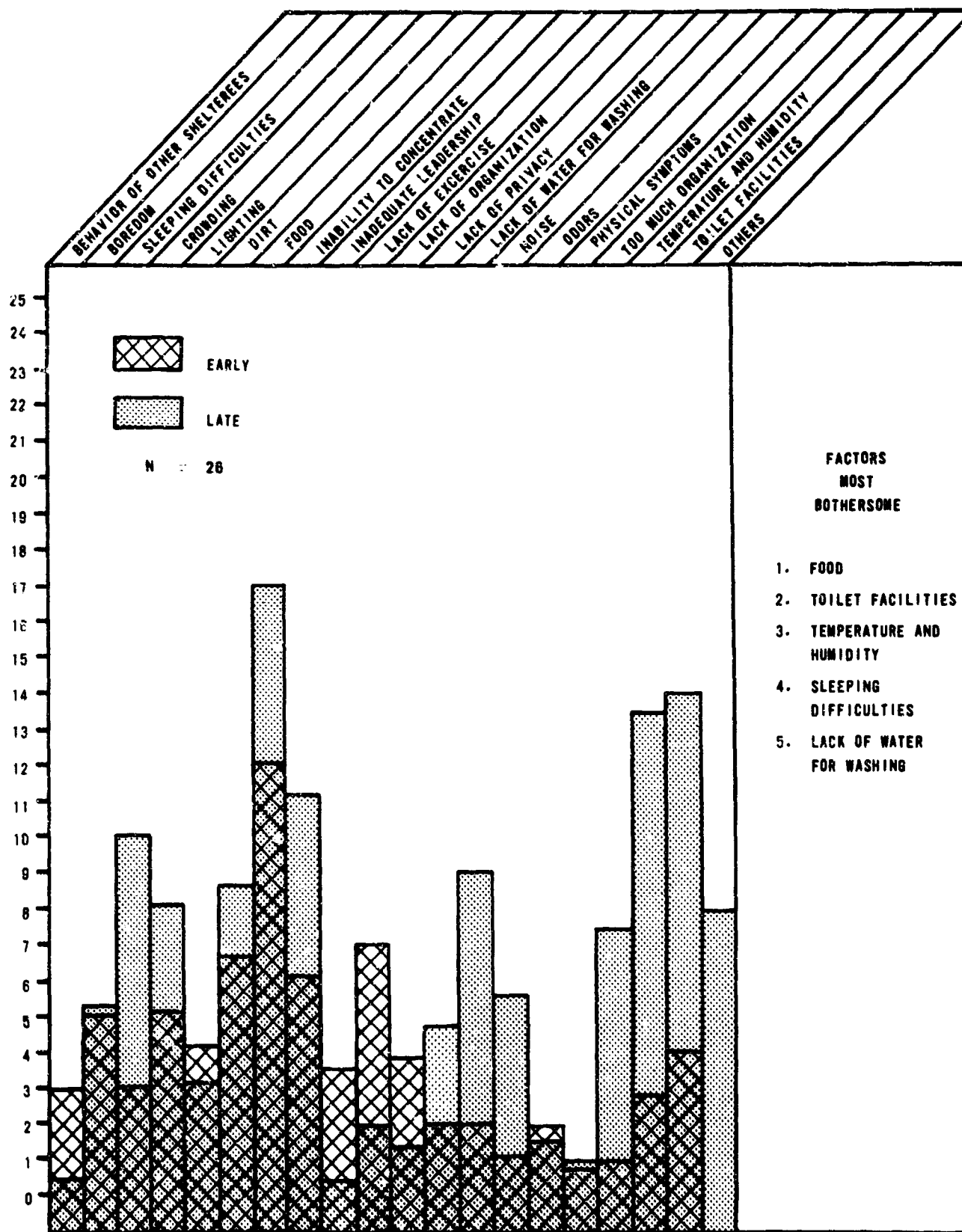


FIG. 14 EARLY AND LATE CONFINEMENT FEELINGS - GROUP III

exercise in Group III might be the fact that this group included two students majoring in physical education. Both groups expected boredom to be a discomfort factor (total of ten); however, only 1 person (Group III) actually found this factor a problem.

For both groups, sleeping, food, and lack of water for washing were the main areas of expressed discomfort. Temperature and humidity and toilet facilities were significant discomfort factors for Group III, though not for Group II. One reason might be that the women found the toilet facilities more disagreeable and there were proportionately more women in Group III.

Three studies by AIR (Hale, 1965, p. 39) have demonstrated similar results. In Studies I, II, and III, sleeping difficulty, sleeping facilities and food were the central discomfort items (in that order). Lack of water for washing, temperature and humidity, and crowding, were also important discomfort factors.

The subjects in a shelter occupancy study at the University of Georgia (Hammes, 1964, p. 9) listed sleeping conditions, the chemical commode, and the lack of bathing facilities as the major discomforts.

An earlier University of Georgia study provides information concerning shelteree reactions, pre and post, as to discomfort factors (Hammes, 1962-1963, p. 132-3). There shelterees anticipated sleeping conditions as the greatest source of discomfort. The post-shelter comments revealed sleeping conditions, lack of bathing facilities, odors, the chemical toilet, uncomfortable temperature, lack of space, and food to be sources of discomfort.

Seven factors were not seen as problems by Groups II and III in the current HRB study: behavior of other shelterees, dirt, inability to concentrate, inadequate leadership, lack of organization, lack of privacy, and too much organization.

Leadership Preference and Shelteree Least Preferred

The subjects were asked (post confinement) to name the person they would most want to have as their leader if they were confined in an emergency with this group. The pre-selected and trained shelter leader was chosen by 50% of Group II; however, 42.8% chose a 39 year old male subject in the study as their leader preference. This subject had acted as chief deputy during the

shelter stay. He was responsible for information and training, as well as religious activities and recreation. His occupation as a school teacher provided excellent background. Another significant factor was the presence of all five members of his family in the shelter. Ninety percent of Group III chose the trained shelter manager as the person they would most want to have as their leader in an emergency. In this group no other individual consistently stepped forward to clearly offer leadership as was the case in Group II.

Another post confinement question dealt with the choice of the members of the group that one would least want to be confined with in a second shelter stay. Three individuals in Group II were chosen by more than five people as "least preference". A nine year old boy was chosen by seven shelterees. Discussion with two shelterees revealed that this boy attempted to gain approval and attention by showing excessive liking for the crackers, even to the extent of trading his candy for crackers. As a result, he became sick and subsequently uncooperative, refusing to move from a position under the benches. His behavior was not overtly disturbing but it obviously bothered many shelterees.

Two other shelterees (a married couple) received 15 "least preference" choices between them. The male was mentioned by seven, the female by eight. One reason for this may lie in the fact that this couple positioned themselves in the middle of the shelter; thus, in effect, dividing the group. Their nonassociative attitude was noted also.

No Group III shelterees received over three choices as "least preference" members of the group. To be specific, 88.4% of Group III responded, "none."

Analysis (Post-confinement - Groups II and III) regarding which persons one associated with most often revealed that members of families tended to break up and mix with their age groups for activity. There seemed to be a great deal of general interaction and interest in each other. Many mentioned that one of the things they liked most about the experiment was the meeting of new people and making friends.

Use of Shelter Space (Fig. 15)

As one looks over the comments of the observers and reflects upon events as they happened in the shelter one cannot help but notice that the major areas

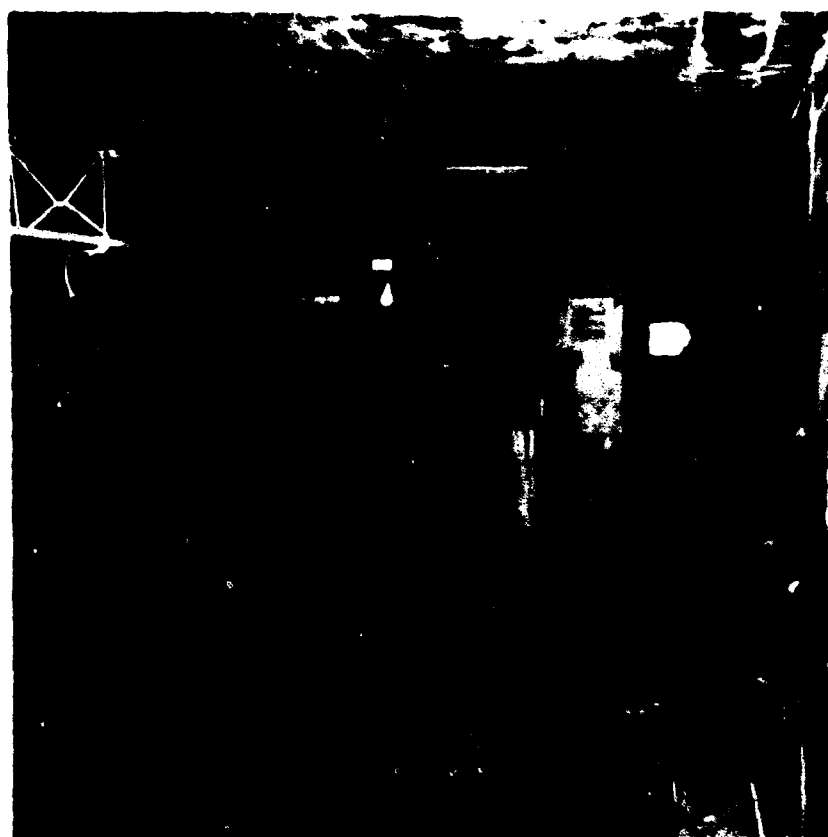
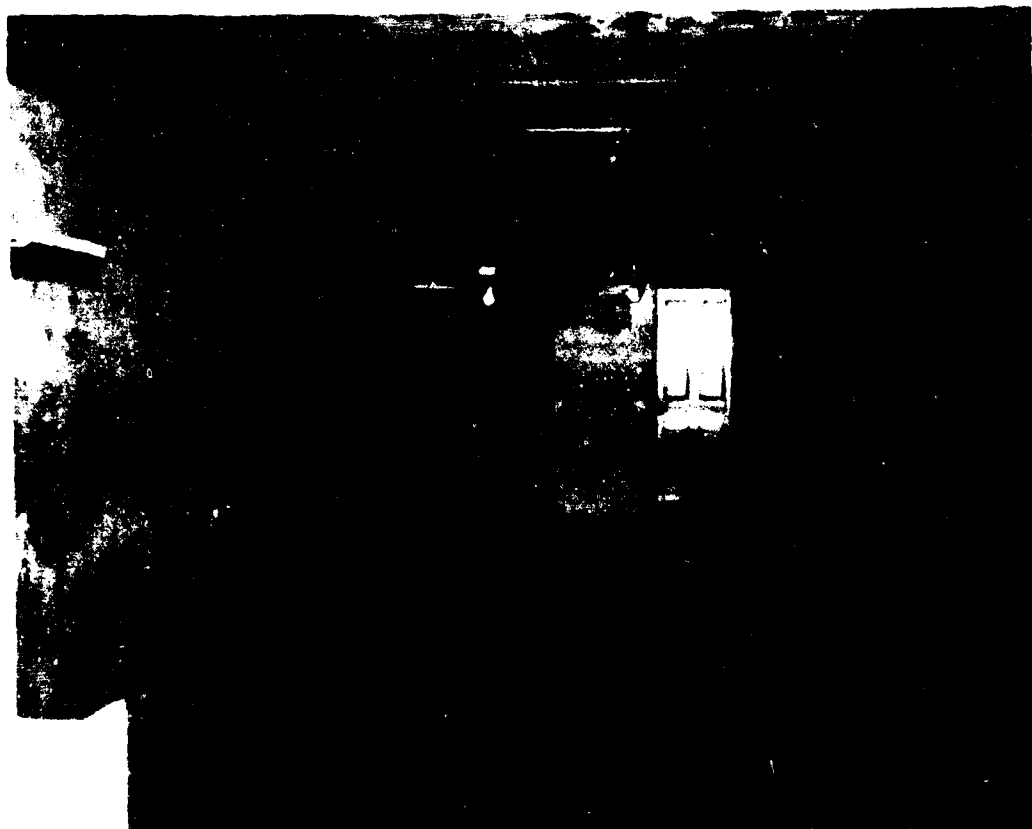


FIG. 15 FALLOUT SHELTER, GROUPS II AND III

of activity developed at the ends of the shelter. The center became a place of little activity or a place kept relatively open for traversing from active area to active area (end to end). Where the center area was kept open, mixing and a flow of persons moved back and forth from end to end. This flow stopped when the center became clogged.

It might be that the design of the shelter (tunnel-like) favored activities at the ends. The placement of the phone, food, medical supplies, and latrine at ends required some travel from end to end. Lights were located at each end and in the center. In addition, smokers were requested to smoke at the latrine end of the shelter. These factors drew the focus of activity to both ends.

Illustrative quotes from the shelter log books follow:

Page 60 - Group III - special note "Activities mainly at far end of the shelter."

Page 86 - Group III - "Mr. S is playing with children. . . older N, the oldest N girl stops, moves to center by herself is quietly reading."

Page 51 - Group II - "Seems to be considerable interest in game in center of room with 8 people--Mrs. K wonders how to get through, can't, changes mind and sits down."

Page 59-Group II - Mgr. jokingly said "The one thing that bothers me most is having to step over that blonde." (Note: "That blonde" was Mrs. B. She and her husband positioned themselves in the center of the shelter.)

In the writer's opinion, the position of the B. couple deterred the amount of activity that might have taken place in the center area of the Group II shelter. It also formed a block to transportation between the two ends of the shelter. This in turn caused less interaction between shelterees and gave an impression of group division. Further, it might be embarrassing to step over and around people, especially a married couple. In a shelter of this design, it might be well to keep the center open to allow ease of interaction and movement. This was the case in Group III and it was efficient.

Methods of Distributing Food

Shelter Group II used more sanitary procedures when siphoning water, serving crackers that were wrapped and distributing candies in containers. Mrs. K. washed her hands before handling any food. Such precautions were not taken by Group III personnel.

One reason for this was probably the difficulty in using the siphon. (See Log - Group III, page 4. "Mrs. N., mildly concerned about the water problem. The hose wouldn't draw." Log - Group III, page 32. "#27 decided water supply was too slow so he used a cup to dip the H₂O. Filled all other cups by this method.")

It is the writer's opinion that the group differences were greatly a function of the cleanliness and responsibility of the person or persons in charge of food distribution.

Reactions of Split Families

There are notes made by the observers to call attention to the fact that there was or may have been more anxiety shown by persons split off from their families than was shown by persons sheltered as complete family units. Several incidents and Log notations could be cited to support a feeling of anxiety on the part of those representing split families. One example is found in the Log - Group II, page 52. "Mr. K. and his son are playing cards. This is the first I've noticed Mr. K. active -- he has slept a lot So far he has not participated in group activity. He has a wife and two children at home, and one child here Mr. K. has been looking at the door ---- he seems very bored. I would guess he has not said a word since he came."

Mr. S. (Group II) frequently referred to his family and his missing them and how terrible it would be if this separation were real. Likewise, Mrs. K. (Group II) referred to being lonesome for her family. Also, the two lone children, a brother (age 9) and sister (age 15), were quite unhappy and the boy was observed crying in the shelter. He was doing much of the crying referred to on page 19 of the Group II Log. In the "post enselterment" reports it was found that the sister had a reaction which manifested itself in her crying and sobbing during the first night after she returned home.

In contrast, the R. family (Group II) kept high spirits and the children got along well. This was also true for the H. 's (Group II). All appeared quite secure and showed this in some of the Log entries. (Page 45 - "Mr. H. 's family has shown a great deal of affection throughout -- hugging, tenderness, etc. Young A's attention need is cared for by all members of the family --- they bounce him, roll him, blow on his neck, etc." Page 58 - "The H. family seems most cheerful and noisy. They and Mr. S. are laughing

and talking. Others are fairly silent while taking the tests." The R.'s and H.'s were unified families.

A further incident of interest concerns the family of six who entered the shelter without their father who was turned down for medical reasons (heart condition). When the ailment had been determined, a few heated moments followed. The situation was resolved by the father offering to return home and permit the rest of the family (mother and five children, ages 5-13) to remain. The father appeared personable in spite of his extreme domination. To be in the shelter without him probably was a relief as well as a burden to the rest of the family. Although the mother (Mrs. N.) became ill the first evening, she kept a fair degree of family order. As the period of confinement progressed, the behavior of her 5 year old son upset her more frequently and at a lower threshold.

Helping to entertain and keep three children busy was a gentleman who had entered the shelter by himself. He said later that he enjoyed this very much. Most of the members of the N. family socialized with the other shelterees fairly well. The oldest daughter (age 13) was quite self-conscious, however, typical of her age group, and hesitant to enter into social activities involving more than the primary group of her family.

Although these may not be items for a valid judgment, they provide some basis for supporting a natural reaction to family separation. Family members are concerned about each others welfare when they are separated.

Needs of Special Groups

Three pregnant women were in the sample invited to participate in the study. Two of the women were in an advanced state (four months and six months) while one was not (six weeks). With the exception of bringing in extra vitamins (as recommended by their physicians), the women were given no special treatment. Their responses on the questionnaires, as well as behavior observed by others, showed no special problems related to their condition. Sleeping comfort was listed as a primary wish; however, this ranked high with nearly all shelterees. It would seem that pregnant women in the study found no special problems related to their physical condition.

Another special group was represented in the shelters. The trained shelter manager was an amputee. For the most part, he had little difficulty moving about the shelter; however, he did comment on one difficulty in his Log. To quote, "...being an amputee, I found it very difficult to be comfortable at night since it becomes necessary for me to remove my trousers in order to remove my limb. Since I was sleeping between two women, I was faced with the prospect of having to replace my trousers in the light, with no privacy." It should be noted that the observers were not even aware that the shelter manager had this problem.

Items Taken into the Shelter (Groups II and III)

The items allowed into the shelter were as follows:

Blankets (2 per person)	Combs and brushes	First aid cream
Crayons	Bobbi pins	Aspirin
Flashlight	Books	Eye glasses
Coats (1 per person)	Matches	Underclothes
Hat	Cigarettes	Tobacco
Cards	Wash-ups	Pipe
Kleenex	Tooth brush and paste	Cough drops
Sweater	Cosmetics	Keys
Knitting	Lifesavers	Pocket knife
Gum	Comic books	Briefcase
Pencils	Bible	Tape measure
Tablets (paper)	Tums (stomach pills)	Safety pins
Purses and contents	Alka Seltzer	Newspaper
Perfume	Toys	Talcum powder
Magic marker	Soap	Candy bars
Coloring books	Spoon, fork and knife	

This list was obtained from three sources: the preconfinement check, the list each shelteree made, and observations made by the in-shelter staff member.

Items Desired in Shelter Stay

Subjects were asked (post-confinement) to list things (easily carried on your person) they would bring if they were to come for another 3-day shelter stay. The items mentioned correlate with problems of entertainment, limited variety and taste of food, as well as with comfort. Some shelterees listed numerous items; whereas others listed few. In addition, there was limited consensus between Groups II and III in that only 9 suggestions (of the 24 mentioned) were itemized by both groups.

Food, and more specifically, candy and jelly, was the main item suggested. Radio, cards, and reading material (in that order) were cited next in frequency. Some other suggestions were: blankets, gum, flashlight, wash'n dry, deodorant and clothes.

The following are suggestions made by shelterees as revealed by the log reports.

1. Padded floors
2. Jelly for crackers
3. Shelves
4. Different shape shelter (more square)
5. Flashlights
6. More and better food
7. Juice or water flavoring (Kool Aide)
8. Reading matter
9. Better ventilation

Shelter Manager's Comments

Shelter Stay--December 2, 3, 4, and 5, 1965 Group II

"I will discuss this stay first from the standpoint of the Shelter Manager and then from that of a regular shelteree.

As the Shelter Manager, my overall impression of this group is that they were outstanding in most respects. They actually required very little "managing." Once a resemblance of organization was set up, they managed

themselves, to a great extent, from that point on. All of the shelter staff functioned well; however, I would like to single out a few for comment. Mr. H. was a very outstanding person. He functioned as a chief deputy, on the staff, responsible for information and training. In addition to information and training, religious activities and recreation were also his responsibility. The church service held Sunday morning was particularly well done. Mrs. K., the lady who supervised the handling of the food and water, also did an outstanding job. She took the job very seriously and was very punctual. She received fine assistance from Mr. C.; Mr. C's daughter served as "bookkeeper" or secretary and did a very fine job. Mr. S. served as health and sanitation chief and also did a fine job.

In my opinion the methods used to "manage" a shelter should be based entirely on the situation. One principle should prevail. That is, everything possible should be done to have the shelterees establish and operate their own "government." I believe that rules and regulations are much easier to enforce if they make them, themselves, or at least feel that they either made them or had a lot to say about the making of them. Good management principles dictate that the "manager" delegate responsibilities and authority to his subordinates and maintain control of the entire operation by supervising his chief deputies. If the manager involves himself with small operations, that could be and should be delegated, the whole operation would suffer. I see no reason why the same thing wouldn't be true in a shelter. If the shelter manager spent a great amount of time, say for example, operating monitoring instruments, he wouldn't be available for the remainder of the operation. In a small shelter this might not make much difference, but in a large shelter, it could become very important.

It was probably noticed that there was some "grouping" within the shelter. I believe that this is not only normal, to some extent, but would mostly be of no harm. First of all, families would naturally stay together and you certainly would do nothing to prevent this. The one thing you would want to discourage would be the formation of "cliques." This would be a situation where one group excludes others from their activities. This situation did not exist within this shelter stay or show any signs, to me, of developing.

At any rate, I believe that in Shelter Management all the principles of good leadership would apply. You would attempt to "govern" in a democratic way, but would revert to a dictatorship on occasion. The wisdom of your actions would lie in your ability to determine when to use these different methods of operation. One thing is for certain, you must keep their respect or you will be finished.

From a personal standpoint, the things that bothered me the most were the lack of space and comfort and the shortage of water and/or other liquids. Although the food supply is very dry and drab, I could remain fairly happy if I had plenty of water for washing and drinking. The configuration or shape of this shelter contributed to my discomfort, considerably. For instance, being an amputee, I found it very difficult to be comfortable at night since it becomes necessary for me to remove my trousers in order to remove my limb. Since I was sleeping between two women, I was faced with the prospect of having to replace my trousers in the light, with no privacy. In other words, I feel that the food supply was not the worst thing I had to endure in the shelter stay. Of lesser importance, but still bothersome was the schedule. I found myself sleeping when I should have been awake and awake when I should have been sleeping. One thing about the food supply, if it was possible to supplement it with jelly for the crackers, and juice or flavored drink of some kind, the improvement would be tremendous.

Shelter Stay--December 9, 10, 11, and 12, 1965 Group III

The things I said in my other report concerning my opinions on shelter management do not bear repeating since I haven't changed my outlook any as a result of this stay. Also my personal discomforts were the same as before with the food supply ranking behind lack of liquids and space and comfort.

The group in this shelter stay differed considerably, in my opinion, from the first group. This group was also a very fine, well adjusted one. The staff appointed did a very good job. One in particular that stood out was Mr. H. who functioned as Deputy for Information and Training. Such men as Mr. G. and Mr. W. turned out to be very dependable individuals, and I believe would have become, in addition to Mr. H., the backbone of the shelter organization. The church service conducted by Mr. G. was not only adequate but well done and very sincere. The food was again well handled as were the medical duties.

This group seemed to "mix" more than the other group. There seemed to be very little grouping and what there was wasn't always based upon family ties. This group endured more than the other one. The heat seemed worse and we seemed to have "bad air" at times. In my opinion, a "strain of independence" showed itself in this group that did not show up in Group II. Over a long haul, they would probably have required more "managing;" however, I don't feel they would likely have become unmanageable. Another hardship that this group endured was more crowded conditions. There were more of them and they had more persons of adult size." (Investigator's note: The amount of shelter space allowed was based upon number of people and not size.)

Summary of Shelter Manager's Debriefing Remarks

"Both groups showed a very cooperative attitude. Leadership was skillfully developed through the guidance of the shelter manager and arose from within the groups themselves. Both groups seemed to adjust to the responsibility of their situation.

Group II recognized and assumed the responsibility of following its leadership in a spirit of common bond and unity of purpose. This group appeared to be much better adjusted and more cooperative than one might find in an actual situation. There did develop two smaller groups within the overall group. They seemed to develop according to the location of persons in the shelter. One group at the control end of the shelter, one group at the latrine end of the shelter with the B's in the center in neither group and with Mrs. K. also in the center accepted in either group. This grouping in no way caused a problem in unity or in any other way.

Group III contained more of an individual attitude of action and in time required more autocratic steps for unity of purpose. The incident involving the closing or opening of the door at the latrine end of the shelter was an example of this. (Individuals had opened this door without permission.)

Morale in both groups was good. Group II had some youngsters (the D's) that became quite unhappy. They were in the shelter without their parents. The boy was 9 and his sister was 15. (It might be noted that those persons who did not eat became ill and also that these same persons seemed to have morale problems (D's and Mrs. B.) The B's did not mix and Mrs. B did not eat.)

This did not seem apparent in Group III; however, again illness played some role in reactions of a positive or negative nature toward the situation. One factor could have developed into a real problem and not just a morale problem. This involved the hoarding of food by B. in Group III. (He brought in food in a briefcase and ate it himself). If he would not have left the shelter surely trouble would have developed.

The physical discomfort of persons in the shelter seemed to be very similar between the members of Groups II and III and between the Groups themselves. All, even small children, complained about the warm water, tasteless crackers, hard floor and bench, and crowded sleeping conditions. Certain persons minded hot and cold more than others. There seemed to me more of a problem with the control of air circulation and temperature in Group III test.

All grumbled but drank the water.

All grumbled but ate the crackers.

Group III had the advantage of B's food after he left the shelter. It picked up spirits and provided some juice and jelly for the children and pregnant women.

All who ate stayed alert, vigorous and in good spirits. Those who did not, as stated before, became ill and uncomfortable.

Group II took quite a number of sleeping pills minding the hard floor and sleeping conditions. Group III it appeared took more aspirin.

Both groups also seemed to participate in the same activities. Reading, playing cards, talking, sitting, sleeping, singing, joking, and some smoking. Reading was done by all (even small children looked at pictures in books). Comic books, novels, school books, newspaper, magazines and whatever was brought into the shelter was passed about. Cards were played by all. The games ranged in difficulty from bridge, poker, hearts, rummy, 8's, solitaire, to war. Poker was played for chips. Sitting and talking took up much of the time. Persons talked on most every subject, in some cases individuals shared experiences with the entire group. (M.H.'s (Group II) trip to Europe. Persons with a wide variety of experiences seemed to find it easier to pass time in this way.) Most people did some dozing during daylight hours. There were several periods of group singing. (Bedtime--Group II and III, March Time--Group III, Sunday Worship--Groups II and III.) There was some individual singing. Teenagers, Group II, spontaneously covered the walls and ceiling with crayon drawings.

(See Fig. 16). Joking about the hardships was a constant pastime.

Smoking did not seem to be a problem in either group. Group II had five smokers, four of whom smoked. (Mr. S. gave up smoking during the stay.) Smokers in Group II smoked at liberty throughout the shelter violating procedure. Like Group III, all smoking was confined to the latrine end of the shelter but unlike Group III, Group II smokers no longer followed the rule they had set up after the first 24 to 36 hours. Still there appeared to be no problem. (Good air circulation helped this situation.)

Behavior of both groups was fundamentally similar. The B. food incident in Group III made little noticeable difference while it existed. Here the shelter manager would be expected to take some action before a real problem might develop.

Group III mixed better than Group II. Neither group was cliquish. Both had a spirit of group loyalty. More individualism appeared in Group III.

Small children appeared to be little or no trouble in both groups, although several individuals expressed being annoyed by them in the post confinement questionnaire."

Decrement in Performance of Mental Tasks

Although data was not empirically gathered concerning the effect of confinement on mental ability, it was observed during the current shelter runs. It appeared to staff members that subjects seemed to suffer a definite decrement in the level of mental functioning as the period of confinement progressed.

Specifically, it was noted that shelterees appeared to choose simpler mental tasks as the period of confinement progressed in time. Some examples were: the substitution of the card game, black jack, for a new and slightly more involved game developed for the research. Bridge was replaced by Hearts. Some of those who brought in work to do said they did not get it done. One adult, a teacher by profession, brought in what appeared to be tax data but ended up reading some children's comic books.

The fact that a low level of functioning did occur in several instances warrants attention. Perhaps this lowered level of mental functioning may be viewed as an adjustive technique or as related to those conditions brought about by a decrease in perceptual stimulation and subsequent reduction in performance.

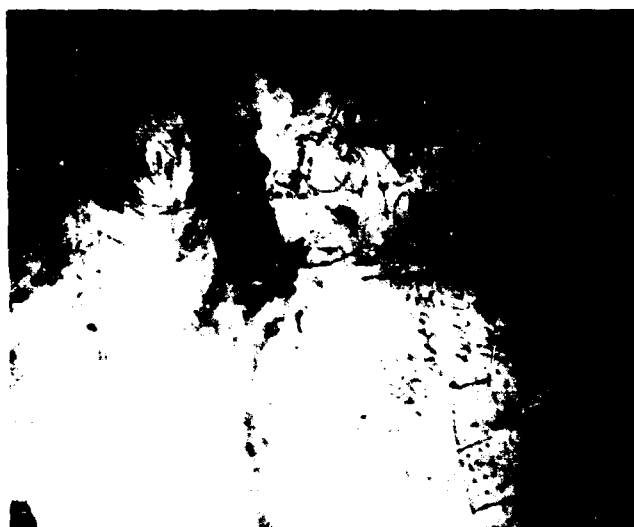
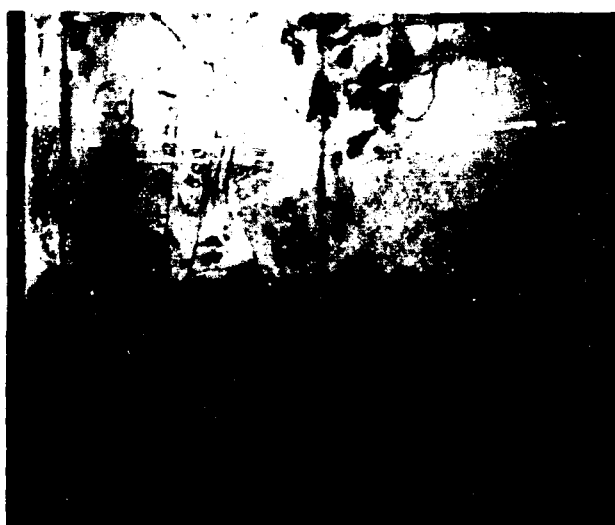


FIG. 16 SPONTANEOUS DRAWINGS BY TEENAGE SHELTEREES, GROUP II

Related to this is an observation pertaining to the presence of two men in Group II who were students majoring in physical education. At no time did they express or arouse interest in physical activity. The organized exercise of walking was initiated and directed by Mr. H. This may be a function of Mr. H.'s overall leadership assumption. On the other hand, it may indicate a decrement in the shelter performance of persons trained in a certain area. There seemed to be no relationship between their vocation and their shelter behavior. One might have expected them to show interest in maintaining their own physical fitness, as well as the physical fitness of other shelterees.

Delayed Expression of Stress

During the week following the study, some of the subjects telephoned the project director to tell her of interesting shelter-related events that happened after returning home. On the basis of these calls, it was felt that post-departure observations on feelings and events (for example, crying and irritable behavior) relating to the shelter stay were a fruitful area of inquiry. A letter was subsequently mailed to each of the subjects along with an information blank. (See Appendix C.)

The following are the four classifications and examples of comments made by subjects, post-departure, which indicate that the shelter experience was perhaps more stress-producing than was revealed during enshelterment.

1. Increased appreciation of nature, loved ones, and everyday events was expressed by seventeen of the fifty subjects. For example, one shelteree said, "I was much more acutely aware of color and of smell. All colors seemed so bright and pretty. . . ." Another reported " . . . a sense of gratitude that I had a family and home to return to Had a greater appreciation for home and family."

2. Seventeen subjects expressed hesitancy or refusal to participate in either two one week shelter stays separated by one week or a two week shelter stay. Mrs. K. (Group II) commented, "I can find nothing more or less attractive in either alternative. I would not spend even 7 days in such conditions except under duress."

3. Four subjects commented that they felt an extended shelter stay would result in their sickness. Constipation and impaired eating habits were problems. One subject flatly stated "If I stayed in 14 days, I'd get sick."

4. There were eight direct expressions of stress, such as crying, inability to eat, irritability ("edgy"), being "More nervous" and being jumpy.

Mrs. E., a pregnant woman in Group II, wrote "I just want to say that it (i. e., the shelter stay) bothered me quite a bit after I returned home. I was fine while I was in the shelter but for about 2 days I just couldn't stop crying."

One girl was with her family in the shelter and her answer in regard to her family's post-shelter behavior was " . . . everyone seemed a lot more jumpy and irritable. I think my Mom was more nervous."

Mr. H. (emergent leader in Group II) felt he " . . . seemed somewhat edgy (afterwards) and short with the children--noise bothered me. This lasted for about two or three days. My wife seemed to have the same symptoms."

Other comments on the post departure questionnaire indicated marked difficulty in re-establishing pre-shelter habits, especially eating habits. Subjects were unable to consume or enjoy as much food directly following the shelter stay. However, normal eating patterns were regained within a few days.

Pertinent Information Regarding Shelter Experience Impact

Many subjects commented (post-departure) that the experience had greatly increased their awareness and concern about the world situation and crises. Individuals were confronted with the "real possibility" of a nuclear attack and resultant shelter confinement. One woman shelteree in Group III stated, "One thing I have noticed myself doing since I came out is paying much closer attention to reports of the Vietnam war. The shelter stay was just real enough to make me think it could possibly actually happen." Another shelteree (Mr. C-Group II) felt the shelter stay " . . . tended to sharpen the perspective with which I viewed the world and the relative importance of some of our activities in it."

These comments point to the "realistic feel" of the shelter experience, a goal which the experimenters strove to achieve.

CHAPTER V

SUMMARY AND CONCLUSIONS

Should there be a thermonuclear attack upon the United States, a large proportion of the country's population would spend the first few days following it in public fallout shelters, marked and stocked by the Office of Civil Defense. Here the people would remain while the hazards in the external environment diminished to the point where they were tolerable. The first few days would be spent in the shelter entirely. No one could venture out other than for emergency reasons for short periods. However, as radiation decayed and danger subsided, individuals could leave protective areas for short periods. When the radiation reduced sufficiently, people could leave.

The current research is focused upon studying the psychological environment that would prevail in such a public fallout shelter during the shelter period. Will there be psychological and sociological problems? If so, what would be the basis for them? What preventative measures are available? How would problems express themselves? When? What remedial actions could be taken? What controls could be applied? What recommendations would be useful to shelter managers? The research described herein has attempted to answer these and other questions through studying the dynamics of behavior during a period of confinement. It was set up to define and measure psycho-social behaviors and to offer recommendations for control. The reader is referred to another publication for the earlier phase of this study (see Wright & Hambacher, 1965).

The purpose of this program of research was (a) to discover, through carefully controlled methods, a set of criteria for identifying the psychological environment found in confinement; (b) to discover changes in behavior during confinement; and (c) to develop methods, techniques, and bases for future research in enshelterment.

Statement of the Problems.

Problem 1. To validate the finding that significant relationships exist between behavior and the psychological environment of early confinement.

To study this problem, two procedures were followed early in the period of confinement: (a) behavior and (b) the psychological environment were measured.

The following hypothesis is presented to discover the relationships posed by this problem:

H₁: There is a significant relationship between human behavior as evidenced in four factors,

1. Dominance
2. Submission
3. Love
4. Hostility

and the psychological environment of early confinement as evidenced in eight factors,

1. Physical Confinement
2. Psychological Confinement
3. Lack of Privacy
4. Lack of Physical Supports
5. Lack of Familiar Behavior Patterns
6. Lack of Familiar Interpersonal Relationships
7. Loss of Identity
8. Fears

Problem 2. To validate the finding that significant relationships exist between behavior and the psychological environment of later confinement.

To study this problem, the same procedures given for Problem 1 were carried out 60-65 hours following the inception of the period of confinement.

The following hypothesis is presented to discover these relationships:

- H₂: There is a significant relationship between human behavior as evidenced in four factors (see Problem 1) and the psychological environment of later confinement as evidenced in eight factors (see Problem 1).

Problem 3. To discover a significant difference in behavior early in and later in a period of confinement.

Two hypotheses are presented to discover these differences.

- H₃: Behavior early in confinement is no different from behavior later in a period of confinement.
- H₄: The distribution of scores representing changes in behavior from early confinement to later confinement will be uniform.

Problem 4. To discover a significant difference in the acceptance of the psychological environment of confinement early in and later in a period of confinement.

To answer this problem, one procedure was followed: the evaluation of acceptance of the psychological environment of confinement early in and later in a period of confinement.

Two hypotheses are presented:

- H₅: The acceptance of the psychological environment representative of confinement is no different early in confinement than later in a period of confinement.
- H₆: The distribution of scores representing changes in feeling toward confinement from early confinement to later confinement will be uniform.

Problem 5. To discover significant differences in behavior in two types of shelter stays, one providing minimum psychological support and the other selected psychological support.

To discover these differences, two hypotheses are presented:

H₇: Behavior early in confinement in a shelter with minimum psychological support is no different from behavior early in confinement in a shelter which includes selected psychological support.

H₈: Behavior later in confinement in a shelter with minimum psychological support is no different from behavior later in confinement in a shelter which includes selected psychological support.

Problem 6 To discover significant differences in the psychological environment of two types of shelter stays, one providing minimum psychological support and the other selected psychological support.

To discover these differences, two hypotheses are presented:

H₉: The psychological environment of early confinement in a shelter stay with minimum psychological support is no different from the psychological environment of early confinement in a shelter with selected psychological support.

H₁₀: The psychological environment of later confinement in a shelter stay with minimum psychological support is no different from the psychological environment of later confinement in a shelter with selected psychological support.

Procedures:

The instruments used to measure behavior and the psychological environment of confinement for "near-normal" psychiatric patients, Group I (see Wright & Hambacher, 1965), were administered to two other groups while each was confined to a fallout shelter. Group II was made up of twenty-four shelterees who received no supplementary psychological support; Group III was made up of twenty-six shelterees who did. Psychological support was provided primarily in the form of complete rather than broken family units as well as more detailed instructions prior to coming and early in the shelter confinement by the shelter manager. Both shelter confinements were carried out under austere circumstances. Shelterees were allowed 1 quart of water per day and 10 square feet of space per person. They were told to bring two blankets per person and allowed

to bring in what they could and normally would carry on their persons. Group III was given the additional privilege of bringing "whatever you would gather together in one or two minutes if you were suddenly called from your home, school or work, or from off the street," although no items unique to the group were brought.

The instruments used to measure the dependent and independent variables were the Self-Description I Scale (Leary) and the Self-Description II Scale (CAS, or Confinement Acceptance Scale), respectively. Data were gathered with other procedures which lent themselves to reporting by categorical methods.

Findings.

The current study was designed to cross-validate the Confinement Acceptance Scale on a Shelter population, to provide a refinement of methodology, to investigate the effects of specified shelter relevant stresses and to approximate a standard for evaluation of indices of psycho-social stresses occurring in shelter confinement.

Problem 1: Hypothesis 1. It was found that H_1 could be accepted in several instances for Group III (and in the hospital sample, Group I) but in no case for Group II. It was found that significant relationships exist between Dominance and the acceptance of (a) Psychological Confinement, (b) Lack of Privacy, and (c) Lack of Familiar Behavior Patterns. Significant relationships were also found for Group III to exist between Love and the acceptance of a Lack of Familiar Behavior Patterns. Throughout the entire study Group III frequently produced findings similar to those of Group I, whereas Group II did not.

Problem 2: Hypothesis 2. It was found the H_2 could not be accepted for Group II but could for nine correlations for Group III. This was true for four for Group I. The nine instances for which significant relationships were found are (a) between Dominance and the Acceptance of Confinement measured by Acceptance of Physical Confinement, Psychological Confinement, Lack of Privacy, Lack of Familiar Behavior Patterns, and Fears and (b) between Love and the Acceptance of Confinement as measured by the Acceptance of Physical Confinement, Psychological Confinement, Lack of Familiar Behavior

Patterns, and Fears. Found with the hospital sample, Group I, were high relationships between Love (lack of hostility) and the Acceptance of Confinement as evidenced by the CAS of Acceptance of Physical Confinement, Psychological Confinement, Lack of Privacy and Lack of Familiar Physical Supports.

Problem 3: Hypothesis 3. None of the measurements of behavior changed significantly, as determined by t-tests, during the period of confinement for Group II or Group III.

Problem 3: Hypothesis 4. In testing H_4 by Chi-square, it was found that the distribution of scores representing changes in behavior from early confinement to later confinement did not change significantly for Group II but did for Group III and Group I.

Problem 4: Hypothesis 5. None of the means for the scores measuring the psychological environment indicating acceptance of confinement, taken early in confinement, were found to be statistically different from those taken later in confinement as determined by t-tests. This was true for Group II and III. These scores changed significantly for Group I.

Problem 4: Hypothesis 6. In testing H_6 by Chi-square, it was found that the values reached significance for Group II in three instances and for Group III in seven instances. For Group I all of the variables measuring the psychological environment of confinement changed significantly.

Problem 5: Hypothesis 7. The Love (lack of hostility) scores were significantly different in early confinement for Groups II and III while the Dominance (lack of submission) scores were no different statistically, as determined by t-tests.

Problem 5: Hypothesis 8. Behavior of Group II differed from Group III late in confinement by having mean scores that were statistically different. (Group II's means were lower than Group III's.)

Problem 6: Hypothesis 9. Group II differed from Group III early in confinement as measured by their acceptance of Physical Confinement (Group II was lower), Psychological Confinement (Group II was lower), and Lack of Privacy (Group II was lower).

Problem 6: Hypothesis 10. The psychological environment of later confinement was different in two instances for Group II and Group III as determined by t-tests. These two were the Acceptance of Confinement as measured by Acceptance of Psychological Confinement and Lack of Privacy.

Finding Related to Problems 5 and 6.

Groups I, II, and III were somewhat similar in their acceptance of physical and psychological confinement. The psychological environments of confinement were found to be made up primarily of large general factors, made up of measurements of acceptance of confinement. The second factor extracted for Group II changed from early to later confinement, being made up of dominance and love measurements in the early period but in the later period made up of scores from the opposite ends of the continuum, namely, submission and hostility. For Group II, hostility did not emerge, rather the opposite, love, remained throughout confinement. Group III's configuration for late confinement was basically love-submissiveness while Group II's was primarily hostility-submissiveness.

Findings from Categorical Data.

Subjects' preconfinement expectations of annoying factors of shelter living proved to be much different from the discomforts expressed post-confinement. Most bothersome were: food, sleeping conditions, lack of water for washing, toilet facilities, temperature and humidity, and lack of exercise.

Preference for shelter management appeared to be dependent upon an individual leader's actual performance, leadership assumption, and shelteree support in the confinement situation.

The shelter groups differed with respect to methods of distributing food and water, perhaps as a function of the personal standards of the individual in charge.

The items desired in a shelter stay as well as those brought in were related to problems of food, entertainment and comfort.

The needs of special groups which might command special attention in a shelter did not appear unique. In the randomly selected sample of this study, the special groups were represented by three pregnant women and one amputee.

Person who were separated from their families seemed to develop more anxiety than those who remained together.

Shelterees appeared to staff observers to choose to do simpler tasks as the period of confinement progressed.

Delayed expressions of stress were manifested by several shelterees upon their return home. These were: periods of crying, irritability, inability to eat, "nervousness," and difficulty in returning to normal habits.

Conclusions:

The following conclusions appear justified on the basis of the findings of the study under the limitations presented in the report and pending further validation procedures.

1. Certain behaviors appear to be important in the psychological environments that exist (a) at the beginning of a period of confinement and (b) following a period of confinement.

2. The psychological environments that exist early and late in a period of confinement can be (a) defined, (b) measured, and (c) controlled.

Implications.

The major implication of the current research is that the provision for psychological support in fallout shelters will result in a greater acceptance of confinement by the shelterees.

An important contribution of this study is the validation of identifiable psychological phenomena related to confinement and the continued successful use of an instrument designed to measure these aspects.

Methods, techniques and bases for research in behavior as related to confinement in fallout shelters do exist and should be utilized.

Suggestions for Research.

The Self-Descriptions I (Leary) and the Self-Descriptions II (CAS) were found to be sensitive to changes in behavior, feelings toward confinement, and the acceptance of it. As yet in the HRB-Singer's studies there have been no manifestation of extreme behaviors, i. e., no one lost self-control, no one defected from the shelter stay, no one flagrantly violated rules, etc. There is a definite need to learn more about those who are unable to tolerate confinement and to learn the conditions under which this might take place.

The samples (Group I, II, and III) in HRB-Singer's study accepted confinement somewhere on a continuum. It is not known just where on that continuum they fell. This should be studied to establish more complete norms.

The shelterees in the study just completed gave several indications of a delayed expression of stress. Do shelterees "bottle-up" stress? If so, does it matter? What provisions can be made in the shelter or by the shelter manager to allow stress to be expressed in socially acceptable methods?

A decrease in the performance of mental tasks by some shelterees was observed by staff members. This appeared to be a normal adjustive technique employed under conditions of reduced perceptual stimulation. Concrete data should be obtained concerning the potentiality of this condition.

The effect of good vs. poor shelter management is a fruitful area for research. In the current research, (Groups I, II, and III) good management prevailed. How does this influence behavior? It would be well to know just what minimums a fallout shelter populace could stand with a good shelter leader and what it would be willing to tolerate with a poor one.

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APPENDIX A

Instruments to Measure Independent Variables

Confinement Acceptance Scale--Form B

Confinement Acceptance Scale--Form C

Tally Sheet and Scoring Blank

A-1

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CONFINEMENT ACCEPTANCE SCALE

SELF-DESCRIPTION--II

Form B

SELF-DESCRIPTION SCALE--II

Listed below are some statements referring to aspects of confinement. These may bother people living closely together. We would like to know how you feel about each. You can tell us by circling the number in front of each statement. Circle the number which best describes how you feel about the circumstance described in that statement. If the statement is not applicable to you, draw a line through all the numbers.

The person marking the examples below has indicated that he is always bothered by doors being locked, that he is sometimes bothered by being unable to leave, and that the last statement does not apply to him.

Examples:

Always	Often	Sometimes	Rarely	Never	
①	2	3	4	5	Doors being locked.
1	2	③	4	5	Being unable to leave.
1	2	3	4	5	The mail is censored.

Circle the number according to the way you feel today. Your first impression is generally the best, so read the statement quickly and circle the appropriate number.

When you have finished indicating how you feel about each statement, list on the back of the booklet the things you dislike most about the situation and the things you like the most.

_____ Name

_____ Date

The following things bother me:

Always	Often	Sometimes	Rarely	Never		
1	2	3	4	5		
1	2	3	4	5	Doors being locked.	1
1	2	3	4	5	Not being able to make my own decisions.	2
1	2	3	4	5	Living in close contact with others.	3
1	2	3	4	5	Not being allowed to change my clothing as I would like to.	4
1	2	3	4	5	Having to give up my previous work schedule.	5
1	2	3	4	5	Not being with my family.	6
1	2	3	4	5	Not being allowed to supervise people.	7
1	2	3	4	5	Being uncertain of rules and procedures.	8
1	2	3	4	5	Having plastic seat on the toilet.	9
1	2	3	4	5	Not being able to shave.	10
1	2	3	4	5	Having no one to confide in.	11
1	2	3	4	5	Not being able to supervise my children properly.	12
1	2	3	4	5	Being uncertain of adequate medical treatment.	13
1	2	3	4	5	Having to use a chemical toilet.	14
1	2	3	4	5	Not being able to see the outside.	15
1	2	3	4	5	Not being able to leave when I want to.	16
1	2	3	4	5	Not having privacy.	17
1	2	3	4	5	Not being able to be alone with anyone.	18
1	2	3	4	5	Having to be without most of my personal belongings.	19
1	2	3	4	5	Not being able to participate in some of my favorite recreations.	20

Always	Often	Sometimes	Rarely	Never		
1	2	3	4	5		
					Losing sexual outlets.	21
					Not being able to work at my usual job.	22
					Having to live in unfamiliar surroundings.	23
					Not sleeping in my own bed.	24
					Not being able to have bull sessions with friends.	25
					Being confined in a small close area.	26
					Being confined for a long time.	27
					Not knowing what to do most of the time.	28
					Not being able to open windows.	29
					Not having trained medical personnel present.	30
					Having to sleep in a room with others.	31
					Being aware of others using toilet facilities.	32
					Not being able to go to my regular church or Sunday School.	33
					Losing contact with friends.	34
					Having to give up regular activities.	35
					Having to get up and go to bed at a certain time.	36
					Not having my favorite chair to sit in.	37
					Being unable to visit with friends.	38
					Having to tolerate unpleasant habits of other people.	39
					Not having a choice of clothing.	40
					Having a toilet so close to living area.	41
					Seeing other people dressing.	42

Always	Often	Sometimes	Rarely	Never		
1	2	3	4	5	Not being able to control temperature.	43
1	2	3	4	5	Not being able to see the people I normally work with.	44
1	2	3	4	5	Having opportunity to act as parent, husband or wife reduced.	45
1	2	3	4	5	Not being certain of activities.	46
1	2	3	4	5	Not having a wrist watch.	47
1	2	3	4	5	Not having enough space to move around in.	48
1	2	3	4	5	Floors and walls being cold.	49
1	2	3	4	5	Not having a selection of food.	50
1	2	3	4	5	Not having water for washing.	51
1	2	3	4	5	Not having running water	52
1	2	3	4	5	Not knowing what is going on at my place of employment.	53
1	2	3	4	5	Not being able to telephone people.	54
1	2	3	4	5	Not knowing what some members of my family are doing.	55
1	2	3	4	5	Being near other people.	56
1	2	3	4	5	Not having a cigarette lighter or matches.	57
1	2	3	4	5	Having to ask permission to do some things.	58
1	2	3	4	5	Not being able to choose the people who share the area.	59
1	2	3	4	5	Not having my own cosmetics.	60
1	2	3	4	5	Dressing in presence of others.	61
1	2	3	4	5	Not being sure how to behave in new situation.	62

Always	Often	Sometimes	Rarely	Never		
1	2	3	4	5		
1	2	3	4	5	Not having all my personal jewelry (rings, pins, etc.).	63
1	2	3	4	5	Not being able to go shopping.	64
1	2	3	4	5	Having to be with people who smoke.	65
1	2	3	4	5	Not having enough choice of recreational activities.	66
1	2	3	4	5	Having to see other people ill or uncomfortable.	67
1	2	3	4	5	Having uncomfortable sleeping conditions.	68
1	2	3	4	5	The way other people are treated.	69
1	2	3	4	5	Not knowing what my friends are doing.	70
1	2	3	4	5	Not being allowed to take showers.	71
1	2	3	4	5	Having to tolerate unpleasant odors.	72
1	2	3	4	5	Having to eat at a certain time.	73
1	2	3	4	5	Having to be in a drab and colorless area.	74
1	2	3	4	5	Having to maintain a schedule.	75
1	2	3	4	5	Not having colorful drapes, rugs, etc.	76
1	2	3	4	5	Having my physical activity restricted.	77
1	2	3	4	5	Not having enough to do to fill my time.	78
1	2	3	4	5	Not being able to snack when I choose.	79
1	2	3	4	5	Not having fresh air.	80
1	2	3	4	5	Having to be with people I don't know all the time.	81
1	2	3	4	5	Being separated from my pets.	82
1	2	3	4	5	Having no place to put my belongings.	83
1	2	3	4	5	Having no pillow to sleep on.	84

Always	Often	Sometimes	Rarely	Never		
1	2	3	4	5		
1	2	3	4	5	Eating food I'm not used to.	85
1	2	3	4	5	Having to drink warm water.	86
1	2	3	4	5	Having to be without music.	87
1	2	3	4	5	Being in close contact with other people's children.	88
1	2	3	4	5	Not having my favorite beverage.	89
1	2	3	4	5	Having to tolerate the noises of the children.	90
1	2	3	4	5	Not having my favorite game or toy or pastime.	91
1	2	3	4	5	Having to miss my favorite TV programs.	92
1	2	3	4	5	Not having a comfortable place to sit.	93
1	2	3	4	5	Having no place to hang my clothing.	94
1	2	3	4	5	Not being able to brush my teeth.	95
1	2	3	4	5	Having to live in depressing surroundings.	96
1	2	3	4	5	Not being able to read the newspaper.	97
1	2	3	4	5	Not having enough peace and quiet.	98
1	2	3	4	5	Not being able to receive mail.	99
1	2	3	4	5	Not being able to listen to the radio.	100
1	2	3	4	5	Having to live in a cluttered area.	101
1	2	3	4	5	Not being able to sleep when I want to.	102
1	2	3	4	5	The size and shape of the room.	103
1	2	3	4	5	Not having suitable lights.	104
1	2	3	4	5	Not being able to turn lights on and off as I wish.	105
1	2	3	4	5	Not having sufficient space for my belongings.	106

SELF-DESCRIPTION SCALE--II
FORM C

_____ Name

_____ Date

Self-Description--II

Form C

Listed below are some statements. These are things that bother some people living closely together. We would like to know how you feel about each. You can tell us by circling the number which describes your feelings best. Draw a line through all the numbers if the statement does not apply to you.

For example, the person answering below says that he is always bothered by doors being locked, that he is sometimes bothered by being unable to leave, and that the last statement does not apply to him.

	Always	Often	Sometimes	Rarely	Never
1. Doors being locked.	①	2	3	4	5
2. Being unable to leave.	1	2	③	4	5
3. Being unable to shave.	1	2	3	4	5

Circle the number according to the way you feel today. Your first feeling is usually the best, so read the statement quickly and circle the number which applies to you.

The following things bother me:

	Always	Often	Sometimes	Rarely	Never
1. Not being able to make my own decisions.	1	2	3	4	5
2. Living in close contact with others.	1	2	3	4	5
3. Being unable to change my clothing as I would like to.	1	2	3	4	5
4. Not being with my family.	1	2	3	4	5
5. Being uncertain of rules and procedures.	1	2	3	4	5
6. Not being able to see outside.	1	2	3	4	5
7. Not being able to leave when I want to.	1	2	3	4	5
8. Not having privacy.	1	2	3	4	5
9. Not being able to be alone with anyone.	1	2	3	4	5
10. Having to be without most of my personal belongings.	1	2	3	4	5
11. Not being able to participate in some of my favorite recreations.	1	2	3	4	5
12. Having to live in unfamiliar surroundings.	1	2	3	4	5
13. Not sleeping in my own bed.	1	2	3	4	5
14. Being confined in a small, close area.	1	2	3	4	5
15. Being confined for a long time.	1	2	3	4	5
16. Not knowing what to do most of the time.	1	2	3	4	5
17. Not being able to open windows.	1	2	3	4	5
18. Having to sleep in a room with others.	1	2	3	4	5
19. Losing contact with friends.	1	2	3	4	5
20. Having to give up regular activities.	1	2	3	4	5
21. Having to get up and go to bed at a certain time.	1	2	3	4	5
22. Not having my favorite chair to sit in.	1	2	3	4	5

	Always	Often	Sometimes	Rarely	Never
23. Being unable to visit with friends.	1	2	3	4	5
24. Having to tolerate unpleasant habits of other people.	1	2	3	4	5
25. Not having a choice of clothing.	1	2	3	4	5
26. Not being able to control the temperature.	1	2	3	4	5
27. Floors and walls being cold.	1	2	3	4	5
28. Not having a selection of food.	1	2	3	4	5
29. Not having water for washing.	1	2	3	4	5
30. Not having running water.	1	2	3	4	5
31. Not knowing what some members of my family are doing.	1	2	3	4	5
32. Having to be with people who smoke.	1	2	3	4	5
33. Not having enough choice of recreational activities.	1	2	3	4	5
34. Having to see other people be ill or uncomfortable.	1	2	3	4	5
35. Having uncomfortable sleeping conditions.	1	2	3	4	5
36. The way other people are treated.	1	2	3	4	5
37. Not being allowed to take showers.	1	2	3	4	5
38. Having to tolerate unpleasant odors.	1	2	3	4	5
39. Having to eat at a certain time.	1	2	3	4	5
40. Having to maintain a schedule.	1	2	3	4	5
41. Having my physical activity restricted.	1	2	3	4	5
42. Not having enough to do to fill my time.	1	2	3	4	5
43. Not being able to snack when I choose.	1	2	3	4	5
44. Not having fresh air.	1	2	3	4	5
45. Having no place to put my belongings.	1	2	3	4	5

	Always	Often	Sometimes	Rarely	Never
46. Having no pillow to sleep on.	1	2	3	4	5
47. Eating food I'm not used to.	1	2	3	4	5
48. Having to drink warm water.	1	2	3	4	5
49. Being in close contact with other people's children.	1	2	3	4	5
50. Not having my favorite beverage.	1	2	3	4	5
51. Having to tolerate the noises of the children.	1	2	3	4	5
52. Not having a comfortable place to sit.	1	2	3	4	5
53. Not being able to brush my teeth.	1	2	3	4	5
54. Having to live in depressing surroundings.	1	2	3	4	5
55. Not being able to read the newspaper.	1	2	3	4	5
56. Not having enough peace and quiet.	1	2	3	4	5
57. Not being able to listen to the radio.	1	2	3	4	5
58. Having to live in a cluttered area.	1	2	3	4	5
59. Not being able to sleep when I want to.	1	2	3	4	5
60. The size and shape of the room.	1	2	3	4	5
61. Not having suitable lights.	1	2	3	4	5
62. Not being able to turn lights on and off as I wish.	1	2	3	4	5
63. Not being able to go to my regular church and Sunday School.	1	2	3	4	5
64. Having plastic seat on the toilet.	1	2	3	4	5
65. Losing sexual outlets.	1	2	3	4	5
66. Having opportunity to act as parent, husband or wife reduced.	1	2	3	4	5
67. Not being able to choose the people who share the area.	1	2	3	4	5

NAME _____ GROUP _____ SELF-DESCRIPTION SCALE - - II PRE _____
FORM B POST _____

A	I
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C	III
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D	IV
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G	VII
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H	VIII
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F	VI
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82	
99	

TOTAL _____

AVERAGE _____

Name _____ Group _____ Self-Description II _____
 Form C Pre _____
 Post _____

A	I
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B	II
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C	III
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D	IV
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F	VI
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G	VII
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TOTAL _____

AVERAGE _____

APPENDIX B

Instruments to Measure Dependent Variables

Self-Description Scale I -- (Leary)

Scoring Blank for Scale

Pre-Confinement Feelings Questionnaire

Post-Confinement Feelings Questionnaire

Follow-Up Questionnaire for Delayed Expression of Stress

SELF DESCRIPTION I (LEARY)

SELF-DESCRIPTION

On the next two pages are lists of descriptive words and phrases which you will use in describing yourself.

Read the items quickly and fill in the circle in front of each item you consider to be descriptive of yourself at the present time. Leave the circle blank if an item does not describe you.

In the example below, the person has shown that Item A describes him and Item B does not describe him.

Item

A ● well-behaved

B ○ suspicious

Your first impression is generally the best so work quickly and don't be concerned about duplications, contradictions, or being exact. Mark the items according to the way you feel today. Do the COLUMNS in order starting with COLUMN 1.

SUBJECT: _____

DATE: _____

COLUMN 1

COLUMN 2

- | | | |
|---|--|---|
| P | <input type="radio"/> well thought of | <input type="radio"/> often admired |
| P | <input type="radio"/> makes a good impression | <input type="radio"/> respected by others |
| A | <input type="radio"/> able to give orders | <input type="radio"/> good leader |
| A | <input type="radio"/> forceful | <input type="radio"/> likes responsibility |
| B | <input type="radio"/> self-respecting | <input type="radio"/> self-confident |
| B | <input type="radio"/> independent | <input type="radio"/> self-reliant and assertive |
| C | <input type="radio"/> able to take care of self | <input type="radio"/> business-like |
| C | <input type="radio"/> can be indifferent to others | <input type="radio"/> likes to compete with others |
| D | <input type="radio"/> can be strict if necessary | <input type="radio"/> hard-boiled when necessary |
| D | <input type="radio"/> firm but just | <input type="radio"/> stern but fair |
| E | <input type="radio"/> can be frank and honest | <input type="radio"/> irritable |
| E | <input type="radio"/> critical of others | <input type="radio"/> straightforward and direct |
| F | <input type="radio"/> can complain if necessary | <input type="radio"/> resents being bossed |
| F | <input type="radio"/> often gloomy | <input type="radio"/> skeptical |
| G | <input type="radio"/> able to doubt others | <input type="radio"/> hard to impress |
| G | <input type="radio"/> frequently disappointed | <input type="radio"/> touchy and easily hurt |
| H | <input type="radio"/> able to criticize self | <input type="radio"/> easily embarrassed |
| H | <input type="radio"/> apologetic | <input type="radio"/> lacks self-confidence |
| I | <input type="radio"/> can be obedient | <input type="radio"/> easily led |
| I | <input type="radio"/> usually gives in | <input type="radio"/> modest |
| J | <input type="radio"/> grateful | <input type="radio"/> often helped by others |
| J | <input type="radio"/> admires and imitates others | <input type="radio"/> very respectful to authority |
| K | <input type="radio"/> appreciative | <input type="radio"/> accepts advice readily |
| K | <input type="radio"/> very anxious to be approved of | <input type="radio"/> trusting and eager to please |
| L | <input type="radio"/> cooperative | <input type="radio"/> always pleasant and agreeable |
| L | <input type="radio"/> eager to get along with others | <input type="radio"/> wants everyone to like him |
| M | <input type="radio"/> friendly | <input type="radio"/> sociable and neighborly |
| M | <input type="radio"/> affectionate and understanding | <input type="radio"/> warm |
| N | <input type="radio"/> considerate | <input type="radio"/> kind and reassuring |
| N | <input type="radio"/> encourages others | <input type="radio"/> tender and soft-hearted |
| O | <input type="radio"/> helpful | <input type="radio"/> enjoys taking care of others |
| O | <input type="radio"/> big-hearted and unselfish | <input type="radio"/> gives freely of self |

SUBJECT: _____

DATE: _____

COLUMN 3COLUMN 4

- | | | |
|---|--|--|
| P | <input type="radio"/> always giving advice | <input type="radio"/> tries to be too successful |
| P | <input type="radio"/> acts important | <input type="radio"/> expects everyone to admire him |
| A | <input type="radio"/> bossy | <input type="radio"/> manages others |
| A | <input type="radio"/> dominating | <input type="radio"/> dictatorial |
| B | <input type="radio"/> boastful | <input type="radio"/> somewhat snobbish |
| B | <input type="radio"/> proud and self-satisfied | <input type="radio"/> egotistical and conceited |
| C | <input type="radio"/> thinks only of himself | <input type="radio"/> selfish |
| C | <input type="radio"/> shrewd and calculating | <input type="radio"/> cold and unfeeling |
| D | <input type="radio"/> impatient with others' mistakes | <input type="radio"/> sarcastic |
| D | <input type="radio"/> self-seeking | <input type="radio"/> cruel and unkind |
| E | <input type="radio"/> outspoken | <input type="radio"/> frequently angry |
| E | <input type="radio"/> often unfriendly | <input type="radio"/> hard-hearted |
| F | <input type="radio"/> bitter | <input type="radio"/> resentful |
| F | <input type="radio"/> complaining | <input type="radio"/> rebels against everything |
| G | <input type="radio"/> jealous | <input type="radio"/> stubborn |
| G | <input type="radio"/> slow to forgive a wrong | <input type="radio"/> distrusts everybody |
| H | <input type="radio"/> self-punishing | <input type="radio"/> timid |
| H | <input type="radio"/> shy | <input type="radio"/> always ashamed of self |
| I | <input type="radio"/> passive and unaggressive | <input type="radio"/> obeys too willingly |
| I | <input type="radio"/> meek | <input type="radio"/> spineless |
| J | <input type="radio"/> dependent | <input type="radio"/> hardly ever talks back |
| J | <input type="radio"/> wants to be led | <input type="radio"/> clinging vine |
| K | <input type="radio"/> lets others make decisions | <input type="radio"/> likes to be taken care of |
| K | <input type="radio"/> easily fooled | <input type="radio"/> will believe anyone |
| L | <input type="radio"/> too easily influenced by friends | <input type="radio"/> wants everyone's love |
| L | <input type="radio"/> will confide in anyone | <input type="radio"/> agrees with everyone |
| M | <input type="radio"/> fond of everyone | <input type="radio"/> friendly all the time |
| M | <input type="radio"/> likes everybody | <input type="radio"/> loves everyone |
| N | <input type="radio"/> forgives anything | <input type="radio"/> too lenient with others |
| N | <input type="radio"/> oversympathetic | <input type="radio"/> tries to comfort everyone |
| O | <input type="radio"/> generous to a fault | <input type="radio"/> too willing to give to others |
| O | <input type="radio"/> overprotective of others | <input type="radio"/> spoils people with kindness |

SUBJECT _____

HOSPITAL _____

TESTING NO. _____

SCORE					DERIVED SCORES		
AP					$D = .7(BC + NO) + AP$	$S = .7(FG + JK) + HI$	DOMINANCE
BC			SUBMISSION				
DE			LOVE				
FG			HOSTILITY				
HI			$L = .7(JK + NO) + LM$	$H = .7(BC + FG) + DE$	DOM		
JK					LOV		
LM							
NO							
			DOM = D-S		LOV = L-H		

TESTING NO. _____

SCORES					DERIVED SCORES		
AP					$D = .7(BC + NO) + AP$	$S = .7(FG + JK) + HI$	DOMINANCE
BC			SUBMISSION				
DE			LOVE				
FG			HOSTILITY				
HI			$L = .7(JK + NO) + LM$	$H = .7(BC + FG) + DE$	DOM		
JK					LOV		
LM							
NO							
			DOM = D-S		LOV = L-H		

TESTING NO. _____

SCORES					DERIVED SCORES		
AP					$D = .7(BC + NO + AP)$	$S = .7(FG + JK) + HI$	DOMINANCE
BC			SUBMISSION				
DE			LOVE				
FG			HOSTILITY				
HI			$L = .7(JK + NO) + LM$	$H = .7(BC + FG) + DE$	DOM		
JK					LOV		
LM							
NO							
			DOM = D-S		LOV = L-H		

NAME: _____

DATE: _____

PRE-CONFINEMENT FEELINGS

Please rate how much you believe each of the following factors will bother you. Circle the word on the right that fits your feeling most closely.

a. Behavior of other shelterees	NONE	MUCH	SOME	LITTLE
b. Boredom	NONE	MUCH	SOME	LITTLE
c. Sleeping difficulty	NONE	MUCH	SOME	LITTLE
d. Crowding	NONE	MUCH	SOME	LITTLE
e. Lighting	NONE	MUCH	SOME	LITTLE
f. Dirt	NONE	MUCH	SOME	LITTLE
g. Food	NONE	MUCH	SOME	LITTLE
h. Inability to concentrate	NONE	MUCH	SOME	LITTLE
i. Inadequate leadership	NONE	MUCH	SOME	LITTLE
j. Lack of exercise	NONE	MUCH	SOME	LITTLE
k. Lack of organization	NONE	MUCH	SOME	LITTLE
l. Lack of privacy	NONE	MUCH	SOME	LITTLE
m. Lack of water for washing	NONE	MUCH	SOME	LITTLE
n. Noise	NONE	MUCH	SOME	LITTLE
o. Odors	NONE	MUCH	SOME	LITTLE
p. Physical symptoms (head- aches, constipation, etc.)	NONE	MUCH	SOME	LITTLE
q. Too much organization	NONE	MUCH	SOME	LITTLE
r. Temperature and humidity	NONE	MUCH	SOME	LITTLE
s. Toilet facilities	NONE	MUCH	SOME	LITTLE

What three things do you think will bother you most in an actual emergency if you were to be confined?

a.

b.

c.

NAME: _____

DATE: _____

POST-CONFINEMENT FEELINGS

Please rate each of the following factors by circling whether it bothered you MUCH (you could hardly stand it), SOME (annoying, but not too bad), LITTLE (you really don't think it was too bad), NONE (it did not bother you at all).

a. Behavior of other shelterees	NONE	MUCH	SOME	LITTLE
b. Boredom	NONE	MUCH	SOME	LITTLE
c. Sleeping difficulty	NONE	MUCH	SOME	LITTLE
d. Crowding	NONE	MUCH	SOME	LITTLE
e. Lighting	NONE	MUCH	SOME	LITTLE
f. Dirt	NONE	MUCH	SOME	LITTLE
g. Food	NONE	MUCH	SOME	LITTLE
h. Inability to concentrate	NONE	MUCH	SOME	LITTLE
i. Inadequate leadership	NONE	MUCH	SOME	LITTLE
j. Lack of exercise	NONE	MUCH	SOME	LITTLE
k. Lack of organization	NONE	MUCH	SOME	LITTLE
l. Lack of privacy	NONE	MUCH	SOME	LITTLE
m. Lack of water for washing	NONE	MUCH	SOME	LITTLE
n. Noise	NONE	MUCH	SOME	LITTLE
o. Odors	NONE	MUCH	SOME	LITTLE
p. Physical symptoms (head- aches, constipation, etc.)	NONE	MUCH	SOME	LITTLE
q. Too much organization	NONE	MUCH	SOME	LITTLE
r. Temperature and humidity	NONE	MUCH	SOME	LITTLE
s. Toilet facilities	NONE	MUCH	SOME	LITTLE

Which factor bothered you most? _____ 1

Which factor bothered you second most? _____ 2

Which factor bothered you third most? _____ 3

1. If you were to be confined in a shelter during an emergency, what member of this group would you most want to have as leader?
2. If you were to be confined during an emergency which persons of this group would you prefer to have with you in addition to the person(s) named in question one and members of your family?
3. If you were to be confined which members of this group would you least want to have with you?
4. Which persons did you spend the most time with?
5. Did anyone interfere with the group working together?
(Circle one: Yes No) Who?
6. What three things did you like the best?
 - a.
 - b.
 - c.

-
7. What part did the fifty dollar honorarium play in your decision to help with the study?
 8. If an actual emergency were to occur,
 - a. What would you do first?
 - b. Where would you take shelter?
 - c. Likely, where would your family members take shelter?
 - d. What (quickly gotten) supplies would you take with you?
 9. If you were to come for another 3-day shelter stay, what things would you bring with you (must be carried easily on your person)?
 10. What recommendations do you have for the caring of:
 - a. Young, school-age children (under 12 years of age)?
 - b. Teenagers (ages 12-20)?

c. Young adults (ages 20-30)?

d. Adults (over 30)?

e. The aged?

f. The seriously ill?

g. Those unable to adjust?

11. The government has stocked many places with basic supplies, namely, crackers, water, sanitary kits, medical kits, and radiological monitoring instruments. Is there anything else you think they should stock that you would consider:

a. Very necessary:

b. Helpful, but not necessary:

Follow-Up Questionnaire

- I. Did the outside world seem different to you after the shelter stay? If so, please describe the ways in which it was different.
- II. After you returned home, did you notice any difference in your relationships with your family or with friends and acquaintances? If so, please describe the difference.
- III. After returning home, did any members of the family who had been in the shelter behave differently than they usually did? If so, please describe the differences.
- IV. If another study were done, would you rather spend fourteen consecutive days in a shelter situation or spend seven days in the shelter, return home for seven days, and then spend seven more days in the shelter? Please explain the reasons for your choice.
- V. Did any change in weight take place while you were in the shelter? If so, what?

What were your eating habits while in the shelter?

VI. Other comments:

Name _____

Date _____

APPENDIX C

Description of Sample and Area

Information Letters and Forms Used with the Sample

Description of Sample and Area: Sex, Age, Marital and
Family Status, Occupation and Education

The subjects for Groups II (7 females, 17 males) and III (15 females, 11 males) were randomly selected from the Patton Township tax listing. Every twentieth individual (and his family) listed on the tax roles was invited to participate in the study. (Every resident is listed, though not every resident pays taxes.)

Patton Township, located in Centre County, has a population of 1,902 individuals and land area of 25.7 sq. miles. Over 90 percent of the population is under 45 years of age. All of the school children attend the State College Area schools.

Patton Township, divided by Route 322, consists of 11 small towns: Woodycrest, Park Forest Village, Scotia, Benore, Boogersburg, Pleasant Hill, Booksburg, Marysville, Paradise, Buffalo Run, and Matternville. In addition to small dwellings and a new housing development, there are four trailer parks and three apartment buildings.

There are no large industrial plants; however there are numerous small contractors (trucking, paving and home building) and realtors in the township.

The two sample groups from Patton Township were very similar in regard to age composition.

Classification		Group II	Group III
Subjects aged	1-12	7	8
	13-20	6	5
	21-40	10	10
	41-60	1	3
		<u>24</u>	<u>26</u>

In Group II there were ten married adults (including three married couples) and in Group III there were eleven married adults (including four married couples). Nine children in Group II and fourteen children in Group III were accompanied by one or both parents.

Occupational index is another useful, descriptive variable of a sample population. The following occupational index is derived from the township tax assessor's classifications:

200+	=	executive position; for example, president or vice president of a company.
100-200	=	levels of university professors
80	=	engineers; mathematicians
70	=	administrators; skilled workers
60	=	teachers and technicians
50	=	secretaries; barbers
40	=	laborers; waitress; nurse
20	=	part-time workers
10	=	housewife; retired individuals; students

Using father's (or family head) occupational classification as the index of socio-economic status, the sample includes:

Classification	Group II	Group III
200+	0	2
100-200	1	0
80	4	4
70	1	6
60	4	5
50	6	1
40	7	6
20	0	1
10	1	1
	<u>24</u>	<u>26</u>

The educational status of both groups ranged from students attending grade school to college graduates.

Classification	Group II	Group III
Attending or attended grade school	7	8
Attending or attended high school	6	4
Graduate of high school	3	4
Attending or attended college	4	5
Graduate of college	<u>4</u>	<u>5</u>
	<u>24</u>	<u>26</u>

November 12, 1965

Dear

HRB-Singer, Inc. is conducting a study to learn more about how groups of people get along without some of the conveniences they have in their usual lives. An example of this is the recent blackout on the East Coast. Without electricity, many conveniences (electrical appliances, lights, etc.) were not available.

You have been chosen to be a member of a small group carefully selected from the occupational register* to be asked to take part in the study. In order to draw accurate conclusions and to enhance generalizations it is necessary for us to have a representative sample for our study. Your name was drawn to be a member of the small study group. We hope you will make every effort to participate. You and each other member of your family taking part in the study will receive an honorarium of fifty (50) dollars at the end of your participation in the study. Only persons age eight (8) and older may participate. To insure that the study will run as smoothly as possible, all those taking part in it must be in good health and now under a doctor's care. Persons who have had serious past illnesses may not take part in the study unless there are no after effects of the illness.

The study will take place at HRB-Singer, Inc. on one of two weekends, December 2-5 or December 9-12, starting on a Thursday evening at 7:00 sharp. It will last 70 continuous hours or less; that is, your presence will be required continuously until late afternoon on the following Sunday. The carefully selected group will live in a room especially designed to be safe but without many of the conveniences we have every day. As you might well expect, we cannot explain the study to you in detail at this time. However, this information will become available to you at the conclusion of the study.

During the three days, the individuals taking part will receive instructions of various kinds as well as contribute by means of simple questionnaires, opinion polls, recordings, games, etc. There will be no tests nor will any information have to be learned. As he leaves, each person completing the study will receive an honorarium of fifty (50) dollars. Food, water, and toilet facilities will be furnished. Comfortable casual clothing is to be worn.

* Located at the Centre County Courthouse in Bellefonte

Page Two
November 12, 1965

We hope you will be willing and able to help us. If you can help, please let us know as soon as possible. More than the required twenty-five (25) people have been invited so those who answer first will receive first consideration. Keep this letter, but return the information blank in the envelope provided. If you are able to take part in the study, you will be contacted before it begins and be given more detailed information. If you have any questions, do not hesitate to call 238-4311 and ask for me on Extension 420.

We are grateful to you for your cooperation.

Very truly yours,

Grace H. Wright, Ph. D.
Senior Research Psychologist
Project Director

GHW:dew

enclosures

Information Blank for Environmental Study

Please check:

- ☐ Yes, I would like to help with the study.
- ☐ No, I cannot help.
- ☐ Yes, I am available for the period, Thursday, December 2 -- Sunday, December 5.
- ☐ No, I am not available for the period, Thursday, December 2 -- Sunday, December 5.
- ☐ Yes, I am available for the period, Thursday, December 9 -- Sunday, December 12.
- ☐ No, I am not available for the period, Thursday, December 9 -- Sunday, December 12.
- ☐ Either period will suit me.

Please write in the spaces below the names of the persons in your family who can take part in the study. Place a check mark in the box after each name to show which age group the person is in.

Name	Age (check group)				
	under 12	13- 20	21- 40	41- 60	over 61
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name _____

Address _____

Phone _____

Signature _____

November 26, 1965

Dear

You have indicated that you are in good health by accepting the invitation to participate in our study. For administrative purposes, it is necessary for us to have a statement regarding your health.

Therefore, would you kindly take the enclosed form to your doctor for his signature. Perhaps you can wait while he signs it and then mail the form back to us in the enclosed postage-free envelope on your way home.

If he has any questions, please ask your doctor to get in touch with me at 238-4311, extension 420.

If members of your family are planning to take part in our study, we need a statement regarding your full consent for our records. You will note that there is a space for each parent and/or legal guardian. Please return this to us at once in one of the enclosed postage-free envelopes.

We are happy you are finding it convenient to help us with our study. Your time and effort is greatly appreciated.

Sincerely yours,

Grace H. Wright, Ph. D.
Project Director

GHW:dew

Enclosures

Reminder Sent to Participants

Group II

HRB-Singer Confinement Study

- Time: 7:00 P. M. sharp, December 2, 1965. Come earlier if possible.
- Bring: Two blankets and whatever you might have on your person if you were suddenly called from your home, from school or work, or from off the street. All your basic needs will be provided. Women may wear slacks if they wish.
- P. S. Do we have your medical statement?
Do we have your legal clearance?
-

Group III

- Time: 7:00 P. M. sharp, December 9, 1965. Come earlier if possible.
- Bring: Two blankets and whatever you would gather together in one or two minutes if you were suddenly called from your home, from school or work, from off the street. All your basic needs will be provided. The food consists of high-nutrient crackers and water plus a carbohydrate supplement. Women may wear slacks if they wish.
- P. S. Do we have your medical statement?
Do we have your legal clearance?

January 12, 1966

Dear

Please accept our thanks for the help you gave us last month in connection with our study to learn more about confinement. We were very pleased that you were able and willing to be part of the study group.

Some members have telephoned me to tell me about things that happened to them shortly after they got home or even later. Others told me things that they became aware of quite a while afterward. We are very much interested in all these comments. For this reason we would like to give you an opportunity to tell us about anything that might have happened to you while you were in the shelter or anytime afterward, that you have not already told us about. A Follow-Up Questionnaire and stamped envelope are enclosed for your convenience. Please feel especially free to discuss anything at all in the section "Other Comments."

You may wish to think about these things for a few days before jotting them down. It would be helpful to us, however, if we could have the Follow-up Questionnaire returned by around February 1. If there are any questions, please do not hesitate to call me at 238-4311, Extension 420.

We greatly appreciate your continued cooperation

Sincerely,

Grace H. Wright, Ph. D.
Senior Research Psychologist
Project Director

GHW:dew

PERSONAL DATA

Name: _____
 Last First Middle

Circle the appropriate information.

Sex: Male Female

Age: 12 and under; 13-20; 21-40;
 41-60; 61 and over.

Education:

	<u>Attended:</u>	<u>Graduated:</u>
	Yes No	Yes No
Grammar School	Yes No	Yes No
High School	Yes No	Yes No
Special	Yes No	Yes No
Type: _____		
College	Yes No	Yes No
Major: _____		

Your Occupation: _____

Father's Occupation: _____

Mother's Occupation: _____

Information for Participants

Time:

Thursday, December 2, 1965, at 7:00 p. m. sharp until late Sunday afternoon, December 5.

Place:

HRB-Singer, Building #5 (across the road from the main administration building).

Supplies:

Please bring two blankets for each member of your party. All other supplies are being provided.

Letters of Participation:

Letters stating participation in the study will be available at the end of the study. You may get one as you leave. The letter will state that you took part in a research study carried out by HRB-Singer, Inc., and will state the time during which the study took place.

Parking:

If you wish, you may leave your car in the parking lot behind the building in the space indicated on the map. This will be in the 3rd lane of the 2nd double row of cars. Your car should be locked.

Honorarium:

You (and each member of your family participating) will receive an honorarium of fifty dollars (\$50.00) for participating in the study. It will be given to you as you leave as soon as the requirements of the research are completed.

Questions:

Please do not hesitate to telephone 238-4311 and ask for me on Extension 420 if you have any questions.

We are pleased you can help with this study.

Grace H. Wright, Ph. D.

HRB-SINGER, INC.

Name _____
First Middle Last

Address _____
Street

Phone No. _____

Motor Vehicle Information:

(if vehicle is parked
at HRB-Singer, please
complete this section)

Make Model Color

License No. & State

In case of an emergency, please call:

Name

Phone No.

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Security Classification

DOCUMENT CONTROL DATA - R&D		
<small>(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)</small>		
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		2b. GROUP N/A
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5. AUTHOR(S) (Last name, first name, initial) Wright, Grace H. Fenstermacher, Nancy H.		
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13. ABSTRACT The study was designed to cross-validate measuring instruments, prepared under Contract OGD-PS-5, to provide a refinement of methodology for use in future shelter studies, to investigate the effects of specified shelter relevant stresses, and to approximate a standard for evaluation of indices of psycho-social stresses occurring in shelter confinement. These purposes were accomplished by comparing the reactions of two equivalent groups, one subjected to selected stresses and the other not, on specifically designed rating forms, tests, and experimental tasks. All other conditions of confinement were equivalent for the two groups. The validation procedure consisted of comparisons between the original group from the psychiatric hospitals and both groups from the shelter confinements. Additional information was obtained through the use of two groups in the validation portion of the study. The results of the study indicated that a shelter group who received supplementary psychological supports evidenced a greater acceptance of confinement than the group for whom none were provided. The experimental data validated previous findings and showed that certain behaviors appear to be important in the psychological environments that exist at the beginning of and following a period of confinement. The study further showed that such psychological environments could be defined, measured, and controlled.		

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
<p>Shelters, Shelter Stresses</p> <p>Shelter Behavior, Cross Validation of Instruments, Refinement of Methodology</p>						

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